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ARIZONA MEDICINE
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Original ARTICLES

Treatment of Various Dermatoses with an Oral Topical and Parenteral Antipruritic

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IN 1955 I(1) reported my results with Sandostene (1-methyl-4-amino-N'-phenyl-N'-(2 thenyl)-piperidine-tartrate) a new antihistaminic which has a pronounced antipruritic effect, in 120 patients complaining of various types of dermatoses, including 23 cases of neurodermatitis, 12 urticaria, 2 Schamberg's disease, 24 dermatitis venenata, 14 atopic eczema, 5 dermatitis medicamentosa with drug eruptions, 20 contact dermatitis, 10 eczematous and exudative seborrhea and 10 asthma with allergic manifestations. In this group of 120 patients, 57 obtained excellent results, 49 good and 14 fair. The results were so encouraging that I decided to continue its use. I found that Sandostene tablets, each containing 25 mg. of Sandostene, and Sandostene plus calcium in ampul solution for intravenous use, each cc. containing 50 mg. of Sandostene in 10 per cent calcium gluconogalactogluconate, have a strong antipermeability, anticholinergic and antihistaminic action, as was shown by Rothlin and Cerletti(2). Sandostene plus calcium in lotion form was also employed and was found to be a useful adjuvant to the strong anticholinergic, antipruritic and antihistaminic action of the tablets and ampul solution. For the sake of brevity, an extensive review of the literature dealing with Sandostene will not be entered into here, but a few pertinent references will be given.

Nasemann(3) treated 169 cases of itching dermatoses of allergic or non-allergic nature with 78 per cent relief of itching after intravenous injections of Sandostene and calcium. Dobes(4), Lapa(5), Clein(6), Cueva and Rodriguez(7), Saffron(8), Schuppli(9), Desai(10), Parker(11), Craig (12) and Modi(13) reported excellent results with Sandostene and Sandostene plus calcium as an anti-allergic and exudative agent. Bereston (14) reported excellent results with Sandostene as an antipruritic and for allergic dermatoses. Smith(15) reported excellent results with Sandostene tablets, Sandostene plus calcium ampuls, syrup and lotion in various allergic disturbances including contact dermatitis, drug rash and pruritus.

In our previous study, we observed the effect of Sandostene in generalized seborrheic dermatitis, drug eruptions, and urticaria, atopic eczema and neurodermatitis, acute exacerbation, dermatitis venenata, contact (plant and occupational), and pruritus associated with other syndromes. In

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the present study, I observed the effect of Sandostene tablets, Sandostene plus calcium ampuls intravenously and Sandostene plus calcium lotion in 105 additional cases. (See Table I). In the acute stage, 10 cc. of Sandostene plus calcium was given intravenously every day or every other day, supplemented with tablets of Sandostene in doses of 4 to 6 daily. If the itching persisted, topical application in the form of a lotion containing Sandostene plus calcium was employed with good results and without side effects. In a few instances it was observed, especially in the chronic case, that Sandostene was found equally as effective as the steroids without untoward incident. Evans and Rackémann(16), Feinberg, Dannenberg and Malkiel (17), stated that the effects of ACTH and cortisone, cannot be due to antihistaminic action. Pillsbury, Steiger and Gibson(18) have shown that certain types of allergic reactions such as urticaria, can be treated with antihistaminic drugs.

More recently I have employed Sandostene Spacetabs, each containing 75 mgs. of Sandostene, in 50 cases, one tablet two to three times daily for adults. This applies also to young adults, although occasionally the dose was reduced to one-half tablet twice daily, for the treatment of chronic urticaria, drug eruption, contact dermatitis, neurodermatitis and allergic dermatitis. Of the 50 patients treated with Sandostene Spacetabs, two patients complained of drowsiness which was transient, or disappeared when dose was reduced. Sandostene Spacetabs were administered to infants and children, with good tolerance, by crushing the tablet and adding to water and sugar. A decided therapeutic advantage of the Spacetab is that it provides sustained therapy from 8 to 10 hours and is safe. None of the patients complained of drug eruption, gastrointestinal complaints, frequency in urination, insomnia, irritability, or other side effects.

CASE REPORTS

N. N., male, 30 years old, diagnosis, seborrheic dermatitis, generalized. Patient had history of seborrheic dermatitis which became generalized due to tension and possibly a new drug he took. He was seen only once because his condition cleared up practically overnight, after Sandostene intravenously, tablets and lotion. Prescription also prescribed for scalp, but it had nothing to do with his rapid improvement due to Sandostene.

A. H., female, 30 years old, diagnosis eczmatous dermatitis, contact with generalization. Patient had been seen by previous doctors because of a contact dermatitis which started in her axillae from a deodorant. Before seeing me, she developed a generalized dermatitis from several new contacts and had used cortico-steroids orally and acthar jel intramuscularly without much improvement. With Sandostene plus calcium intravenously, lotion locally, Sandostene tablets orally and a small fractional dose of x-ray, she completely cleared up in one week, very happy and well satisfied.

L. L., female, 50 years old, diagnosis, atopic eczema with asthma. Patient has been seen periodically because of her atopic eczema. On June 29, 1956 she had a recurrence which was not controlled by acthar jel intramuscularly or cortico-steroids orally given by her allergist. When I saw her, she had a generalized dermatitis which was brought under control by Sandostene plus calcium intravenously, locally, and Sandostene orally. Later it was necessary to hospitalize her because of her recent sensitivity to Bermuda and alfalfa inhalants. The sedative effect of Sandostene plus calcium was remarkable and gave her more relief than other tranquilizing drugs.

D. H., male, 43 years old, Sept. 9, 1956, diagnosis dermatitis venenata with superimposed contact dermatitis. Patient had contact dermatitis from poison ivy for one week, with superimposed chemical dermatitis 48 hours before consulting me. All measures he used gave him no relief. Patient slept for practically 24 hours after intravenous Sandostene plus calcium and lotion locally. Marked improvement noticed in 24 hours – very little itching.

R. S., female, 31 years old, May 14, 1956, diagnosis, dermatitis venenata with treatment dermatitis. Patient developed a weed dermatitis three weeks before seeing me. Was badly overtreated so her itching was intense when I first saw her. She was greatly relieved by Sandostene plus calcium intravenously and locally and Sandostene tablets, and completely cleared up in 10 days. X-ray therapy given to eczematous areas.

E. M., male, 34 years old, diagnosis, dermatitis venenata. Four days before the patient saw me he had been on a picnic and contacted poison ivy. All medication used locally and internally failed to give him relief. Numerous new vesicles appeared every day. Sandostene plus calcium intravenously had amazing effect on the patient, practically causing cessation of new eruptions. Response was very gratifying. Patient was dismissed in 8 days — clear.

S. M., male, 68 years old, diagnosis, contact dermatitis, chlorine and chlorodine. This patient had a beginning generalized dermatitis which responded nicely to Sandostene plus calcium intravenously and Sandostene orally. After inadvertently using another ointment he flared up again but is being brought under control by Sandostene plus calcium intravenously. Calcibronat intravenously did not seem to give as good results. Sandostene plus calcium lotion was very helpful in controlling new eruptions.

L. S., female, 25 years old, diagnosis, urticaria, cause unknown. This patient was only seen once by me. I saw her in rather an emergency situa-

TABLE I

Diagnosis	No. of Patients	Results Excel.	Good	Poor	Side Effects
Seb. Derm. generalized ...	5	3	2	0	None
Drug eruptions and urticaria, other causes	30	16	10	4	One developed severe headache. One became drowsy and had to reduce dosage. One had itching aggravated.
Atopic eczema and neuroderm. acute exacerb.	20	9	6	5	One developed sleeplessness. One developed mild headaches. One became quite nervous. Two developed dry mouth.
Derm. Venen., contact (plant occupational)	20	10	8	2	One had itching become worse. One developed dry mouth.
Pruritus assoc. with blood dyscrasias, lichen planus, diabetes mellitus, hepatitis, scabies	30	10	14	6	One became too drowsy so discontinued tablets. One thought dermatitis became worse. One developed headaches after first i.v. injection.
TOTAL	105	48	40	17	

tion because of giant hives. I hesitated to use Sandostene plus calcium intravenously because she was alone and had to drive some 15 miles, but decided to take the chance. I told her to go directly home and, if sleepy, to go to bed. This she did and had a wonderful night's sleep. The next day she called to say she was entirely clear and wanted to know if she could wait another day before keeping her next appointment. The second day she called saying that she still was without hives so she was instructed to take Sandostene tablets and to see me again if necessary. I have not heard from her since, so assume that she is well.

I. B., female, 34 years old, April 10, 1955, diagnosis, urticaria. For approximately one month this patient had had persistent hives which were not controlled by the usual remedies prescribed, including ACTH intramuscularly, antihistamines and cortisone orally. She received great relief from one injection of Sandostene plus calcium intravenously and Sandostene tablets, and had a good night for the first time in many weeks. Injections were continued every other day, with sedation later because of emotional personal problems. She was dismissed in approximately three weeks, symptom free. The point of interest in this case was the great amount of sedation that she received from the Sandostene plus calcium. This has been the case in many patients who state that they thoroughly relax. I still have some "old timers" who come in occasionally for injections for that reason.

P. D., female, 39 years old, July 19, 1956, diagnosis, giant urticaria. I had seen this patient for a month prior because of a sun sensitivity which responded very nicely to Aralen Diphosphate and protective measures. She returned later with giant hives which appeared to be on an allergic basis (beer and Hollywood bread – B complex?). There was also some emotional problem, so she was given Calcibronat intravenously, sedation and cortico-steroid orally without results. Later ACTH intramuscularly with very little benefit. Then, elimination diet with some improvement. Finally, Sandostene plus calcium intravenously was given for the sedative effect and she promptly began to improve. The injections were given daily at first, later every other day. She was dismissed with dramatic results.

SUMMARY

1. Sandostene plus calcium parenterally and topically and Sandostene orally was used in a total series of 225 cases with various types of dermatoses.

2. Further evidence was accumulated to justify its use as an effective antipruritic, antiallergic and anti-exudative agent.

3. Sandostene Spacetabs have a therapeutic advantage in that sustained therapy can be achieved over a period of 8 to 10 hours.

4. Sandostene with calcium intravenously and Sandostene orally, proved more effective than ACTH and cortisone in a few cases of intractable urticaria.

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Hemophilia and Related Conditions

By John F. Currin, M.D., A.A.C.P.
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RECENT advances in the study of disorders of coagulation and particularly hemophilia have tended to be confusing to the average physician rather than to add to his knowledge of this group of diseases. The confusion has arisen as a result of the discovery of several disease states similar to hemophilia and because of the unfortunate names given to certain disorders which are in no way related to hemophilia.

Classical hemophilia is a disorder which has been recognized for centuries. It is an inherited disease transmitted from the male through an unaffected daughter to a grandson. Very rare clinical cases involving females have been reported. It must be assumed that mutations of chromosomes may arise now and then beginning a new hemophiliac strain. The classical symptom of hemophilia is spontaneous hemorrhage following very mild trauma. This symptom is present from early childhood. These hemorrhages involve the skin, subcutaneous tissues, and joints most commonly. Repeated joint hemorrhages lead to ankyloses of the involved joints. Fortunately the gastrointestinal tract, nervous system and urological tract are less commonly involved. The defect in this condition is a lack of Anti-Hemophilic Factor (AHF) which is part of thromboplastin component. Examination of the blood of these patients reveals that they have an elevated clotting time and an elevated prothrombin consumption time. The bleeding time, prothrombin time, clot retraction and platelet count are normal.

In 1952 a disease similar to hemophilia was first described. It is due to the lack of a factor called Plasma Thromboplastin Component (PTC). Because the first case studied was in a patient named Christmas this illness is often called Christmas Disease. PTC deficiency is similar to hemophilia in its clinical symptoms. Laboratory examination reveals that the coagulation time and prothrombin consumption time are both prolonged in this condition also. However, the most diagnostic point for the clinician is that the *addition of normal serum will correct the abnormal coagulation time in this illness, but not in hemophilia.* In the very mild cases it may be necessary to perform a more complicated thromboplastin generation test to establish the diagnoses. The addition of pure Anti-Hemophilic Factor to the blood of a patient with PTC disease will not correct the abnormal coagulation time.

Another curious hemorrhagic condition related to hemophilia has recently been described. This disease is due to a lack of Plasma Thromboplastin Antecedent (PTA). This disease may occur in both sexes. It is a milder condition than either of the first two conditions. Joint hemorrhages do not occur, and the coagulation time is only slightly prolonged. It differs from hemophilia in the fact that the addition of normal sera to the blood of the patient will return the coagulation time to normal. It differs from PTC deficiency in the fact that the addition of either serum or plasma absorbed with barium sulfate ($BaSO_4$) will correct the coagulation time of PTA deficiency but not PTC deficiency. This latter test is important to the hematologist, but is not of great importance to the busy practitioner. The fact that PTA deficiency occurs in both sexes, and is not associated with joint hemorrhages or a markedly prolonged coagulation time should allow it to be differentiated from PTC deficiency with a fair degree of accuracy.

A final disease which needs differentiating from hemophilia is the presence of a circulating anti-coagulant. This condition may occur following delivery, after radiation, or nitrogen mustard therapy, or as a complication of lupus erythematosus. Some of these circulating substances bear a close resemblance to heparin. Addition of the plasma of a patient with a circulating anti-coagulant to normal blood will cause prolongation of the coagulation time of the normal blood.

It is important that these conditions be differentiated from each other, as the treatment of these diseases is not the same. Hemophilia must be treated with fresh blood, or fresh frozen or lyophilyzed plasma which contains the Anti-

	Hemophilia	PTC	PTA	Anti-Coag.
Sex:	Male	Male	Both	Both
Coagulation Time:	30-60 min.	30-60 min.	15-30 min.	30-60 min.
Joint Hemorrhage:	four plus	four plus	one plus	one plus
Clot time Improved				
Sera:	0	yes	yes	0
Plasma:	yes	yes	yes	0
BaSO4 plasma:	yes	0	yes	0
AHF:	yes	0	0	0
Normal blood Coag. time Prolonged by patient's blood or plasma:	0	0	0	yes
Treatment:	Fresh blood Frozen plasma Fresh plasma AHF	Bank blood Reg. plasma PTC extract?	Bank blood Reg. plasma	Toluidine Protamine ACTH, cortisone?

Hemophilic Factor (AHF). Regular bank blood or pooled plasma is of no avail in correcting the coagulation defects. The local bleeding areas are best controlled with pressure and topical thrombin. The conditions due to deficiency in Anti-Thromboplastin Component (PTC) and Anti-Thromboplastin Antecedent (PTA) may be treated with regular bank blood and pooled plasma. Purified antihemophilic globulin is of no avail in correcting the coagulation defects of these two conditions. Circulating anti-coagulants are very difficult to treat. Blood and plasma appear to be of no help. Treatment with ACTH and cortisone seems to be of questionable help. Because of the relationship of some of the anti-coagulants to heparin, protamine and toluidine blue are often of help. If a history of dicoumerol ingestion is obtained, of course Vitamin K-1 is the treatment of choice.

There are two further disorders which tend to confuse the issue, primarily because of their names. Von Willebrand described an unusual disease which he called pseudo hemophilia. Unfortunately this condition bears no relation to hemophilia. It consists of a state in which there is evidence that the platelets are unable to function properly. The bleeding time is abnormal; clot retraction and prothrombin consumption time may be abnormal, but the coagulation time is normal. The platelet count is normal. So one has a state similar to thrombocytopenic purpura except there is no thrombocytopenia.

Para-hemophilia is another misnomer. This is a condition which occurs due to lack of Factor V which is part of the prothrombin complex and bears no relation to hemophilia. The major laboratory abnormality is an elevated prothrombin time. Normal plasma which is 48 hours old will have an elevated prothrombin time. Addition of normal fresh plasma will bring the prothrombin time of aged plasma to normal. However, fresh plasma of patients with this condition will not shorten the prothrombin time of aged plasma.

I have attempted to simplify the diagnoses of hemophilia and its related disorders. I have refrained from mentioning some minor and not very well described diseases. I have attempted to demonstrate how it is possible, by a few simple procedures which may be done in any office or laboratory, to arrive at the correct diagnosis in this group of confusing illnesses and to aid the patients with the correct therapy.

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Hepatic Coma A Clinical Study

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HEPATIC coma is a clinical syndrome long recognized and variously designated as acholia, (1) cholemia,(2) hepatargy,(3) and most recently, even perhaps most accurately termed portal-systemic encephalopathy.(4) In addition to the usual signs of liver failure, the characteristic clinical features in typical hepatic coma include emotional lability, mental dullness, delirium, flapping tremor, distinctive moaning cry, and abnormal neurological signs. The syndrome frequently progresses through irreversible coma to death. Wide variations in descriptions of this syndrome which exist are largely the result of differences in patient material and stages of coma in which the observations have been made.

It was the object of this study to review cases of hepatic coma which were personally observed during the last eight years. Careful attention was given to the detection of the earliest signs suggesting impending coma, since obviously this period should offer the greatest opportunity for its reversal. It seems clear that there is a state of pre-coma or impending coma which precedes true hepatic coma, and it may occur in any type of liver disease. No essential qualitative difference is to be noted in these signs in the patient with acute hepatitis or the patient with diffuse hepatic fibrosis. In both groups, pre-coma symptoms may be transitory and subside without progression into coma.

Deep hepatic coma varies from patient to patient, but the general features in all forms of liver disease are quite similar. Reversibility and recovery is more common in the patient with cirrhosis than in the patient with extensive cellular damage. Pre-coma may be very transitory, persist for days, or progress straight away to deep coma. True coma may appear precipitously or only after many days of pre-coma. It may either be irreversible, resulting in death, or clear completely with apparently no residuum. Certain variations in precipitating factors are also noted in the two groups.

Ephemeral as the evidence may be, there persists in the mind of anyone studying these patients, features which indicate a common denominator regarding etiology. A diverse pathogenesis may exist in the several forms of liver disease, but somewhere a common casual factor probably exists.

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PATIENT MATERIAL

Patient material for this study is divided into three groups. All patients were observed by at least one member of the group (MHD) and followed to autopsy or dismissal from the hospital during a period from January 1947, through August 1955.

Group I consisted of 43 patients with liver disease manifesting hepatic coma. The following criteria were observed in making the diagnosis of hepatic coma: 1) the presence of coma associated with delirium, flapping tremor, fetor hepaticus, or other signs and symptoms usually associated with hepatic coma; 2) the presence of primary or secondary liver disease; and 3) the absence of any other disease that would adequately explain coma.

Very likely, some cases of hepatic coma were overlooked or mistakenly omitted even though almost every patient with serious liver disease seen at this hospital during the past nine years has been seen by one of this group (MHD). It frequently is difficult, however, to determine the cause of coma in patients after massive hematemesis has occurred. The same is true in patients with malignant tumors which have spread to the liver and other organs.

Group II was composed of 100 healthy blood donors. Blood ammonia levels were determined on these individuals to establish normal values for our laboratory. The determination of the blood ammonia concentration was carried out by a modification of Conway's method.(5,6)

Group III included 14 patients with liver disease upon whom blood ammonia levels were done. Such studies were available only during the last six months of this study and consequently the number of patients in this group is small.

RESULTS

The diagnosis of the underlying liver disease in each case is listed in Table I. Post mortem

examination was done in 31 cases and liver biopsy in six others. In the remaining six patients the diagnosis was made on clinical evidence.

Laennec's cirrhosis or, more properly termed, diffuse hepatic fibrosis was present in 24 patients. This is not an unexpected number of such cases since this disorder is probably the most frequent type of chronic liver disease.

The patients were almost equally distributed as to sex, there being 22 females and 21 males. Eight patients were Negro and 35 were Caucasian. This roughly represents the ratio of admission to this hospital. Their ages ranged from eight to 75 years. Three patients were in the first or second decade of life, one in the third, five in the fourth, 10 in the fifth, 16 in the sixth, seven in the seventh, and one in the eighth.

Table II lists the symptoms and signs most frequently observed prior to the onset of coma. Irritability, confusion, and delirium ranked in that order as evidence that coma was imminent.

Table III lists the most frequent physical findings. All but two of the patients were jaundiced at the onset of coma. Enlargement of the liver and ascites were the next most common physical findings. Thirty-eight patients had a temperature above 99 degrees F. Eight of the latter had a temperature above 104 degrees during the illness.

Table IV summarizes the neurological signs observed during coma. While muscular irritability and muscle tremor are constant features, either during pre-coma or coma, we have seen only one patient actually having convulsive seizures.

Tables V and VI show laboratory data on these patients.

Biochemical tests of liver function showed significant abnormality in these cases with severe hepatocellular injury. In patients with cirrhosis, however, this was not necessarily true.

An analysis of precipitating factors in hepatic coma are presented in Table VII. The most common event preceding the appearance of coma was of bleeding from esophageal varicosities or other undetermined sites in the upper gastrointestinal tract. This occurred in 21 cases. Three patients had received ammonium chloride prior to the appearance of coma. One patient had received amino-acid preparations intraven-

TABLE I

ETIOLOGY OF LIVER DISEASE IN PATIENTS WITH HEPATIC COMA

DIAGNOSIS	MALES	FEMALES	TOTAL
Laennec's Cirrhosis	12	12	24
Post necrotic nodular cirrhosis	4	2	6
Biliary cirrhosis	1	3	4
Infectious hepatitis	1	3	4
Serum hepatitis	1	1	2
Carcinoma			
Primary	1	0	1
Metastatic	1	1	2
TOTAL	21	22	43

TABLE II

SYMPTOMS DURING PRE-COMA STAGE

SYMPTOM	NUMBER PATIENTS IN WHOM PRESENT (43 Cases)
Irritability	36
Confusion	30
Delirium	28
Agitation	23
Lethargy and Weakness	20
Peculiar Cry	19

TABLE III

PHYSICAL SIGNS OF HEPATIC COMA

PHYSICAL SIGN	NUMBER PATIENTS IN WHOM PRESENT (43 Cases)
Hepatomegaly	42
Jaundice	41
Fever	38
Ascites	34
Evidence Collateral Circulation	33
Liver Palms	33
Spider Nevi	27
Splenomegaly	19
Flapping Tremor	19
Foetor Hepaticus	15

TABLE IV

NEUROLOGICAL SIGNS DURING HEPATIC COMA

NEUROLOGICAL SIGN	NUMBER OF PATIENTS IN WHOM PRESENT (43 Cases)
Normal reflexes	24
Babinski	7
Hypoactive reflexes	7
Hyperactive reflexes	4
Absent reflexes	3
Nystagmus	1
Convulsions	1

ously. One had received exchange resins containing ammonium. Grouping these four items together, 26 patients had unusual amounts of nitrogenous substances in the intestinal tract before coma developed. Three patients developed pneumonia prior to the onset of hepatic coma. Pre-coma and coma quickly followed paracentesis in three patients. Two instances followed surgery. Coma followed the administration of barbiturates in one, and narcotics in another. In only one case was an alcoholic debauch an incident immediately preceding hepatic coma.

TABLE V

HEMOGLOBIN, WBC, AND LIVER FUNCTION STUDIES *

Case	Hgb. Gms.	WBC	BB D	BB T	AP	UU	FU	PT	BROM.	CC	TT	CE	SA	SO	SI	TC
MF	14.9	6,150	0.7	4.0	2.5	10.0	630	89%		4	10	69%	4.5	3.0	220	175
EA	8.4	6,900	0.8	1.5	5.0	0.7		79%		4	22	30%	4.5	3.5		146
HJ	12.0	3,850	12.0	24	3.0	1	300	69%		4	28	39%	2.5	4	140	220
FR	9.8	5,050		12	13.6		4	77%		4		39%	2.5	4.0		250
RB	14.2	4,350	4.0	7	12.2			59%		1	4	9%	3.0	2.0	65	175
MB	10.7	26,650	5.0	10	10		133	33%		2	10	20%	2.0	3.0		230
TL	11.8	16,600	2.0	5	2.0	0.9		89%		4	20	69%	3.5	3.0	135	220
Mlle	13.6	13,600	14.2	26	8.0	4		39%		4	20	39%	3.0	3.0	225	150
CG	8.0	6,250	11.0	19.4	8.0			39%		2	0	10%	2.5	0.3	381	63
KA	12.0	29,600	3.0	16	3			51%		3	9	10%	3.0	3.0	170	160
ST	11.3	2,950		12		0	100	39%	80%	4	32	69%	1.0	4.5		250
AC	10.9	10,650	12	16	10	2		59%		3	16	10%	3.5	2.0	56	250
EW	3.4	16,200	0.6	15	2.0					4	10	10%	2.5	3.0		150
PD	11.8	11,550	8.6	16	2.5	3.0		39%		4	20	29%	2.5	3.5	156	200
RS	9.5	6,700		17.5	88	0.2		39%	5%	1	14	49%	1.0	3.5		200
PK	13	6,500	6.6	14		0.0	75	89%	100%	2	24	39%	1.37	3.23		200
IT	12.6	10,200	2	3.5	2.0			39%		4	49	39%	2.0	4.5	70	150
FY	17.6	6,600	25	34	3			59%	20%	4	60	29%	2.5	4.5		175
LT	16.4	5,600	6	6	10			39%	20%	4	12	59%	3.5	3.5		150
JN	11.7	6,750	1.5			6.0	150	39%	60%	4	18	69%	2.0	3.0		98
CB	8.0	10,400	2.5			17.0	60	69%		3	8	59%	2.0	4.5		230
CW	6.0	21,500	1.0	8.2						2	5	30%	1.0	2.6		212
WE	12.1	8,600		2.0				69%	10%	3	7		2.5	2.0		150
WR	9.0	9,200		16						2	5	20%	1.5	3.0		
ZM	15.0	26,000														
NS								19%					2.3	2.2		
EB	12.0	12,000	5.0	10.0	12.1		75	79%	3%	3	13	30%	3.11	2.05		295
WM	11.4	9,800	1.7	4.3	1.9	0.7	120	69%	12%	4	24	49%	2.16	3.34	137	286
BP	9.0	8,000	1.7	6.9	1.6	3.9	420	39%			23	39%	2.84	3.46	212	256
GC	11.0	16,000	38.0	42.2	69.0			100%		Neg.	9	0%	2.61	2.39	390	756
MJ	11.2	5,000	0.9	15.7	5.7			61%	67%	4	25	30%	3.36	2.24	110	276
RG	12.5	15,200	2.2	5.0	5.7			79%		Neg.	24	69%	2.42	4.42	95	200
AM	11.6	6,650	12.9	21.2	4.2	0.4	5	43%	99%	3	12	29%	3.16	3.42	135	280
PC	7.6	8,250	7.9	14.4				39%					2.38	3.62		
JG	6.5	5,200	0.5	1.7	16			39%		3	6	69%	3.47	1.43	388	237
EMS	9.7	6,000	6.4	8.4	1.9			19%		4	17	29%	2.31	3.39	176	79
RB	10.4	27,100	6.8	10.6	14.2	7.0		69%		3	16	19%	0.64	4.46	102	348
AH	8.7	7,500	0.8	11.5				69%					3.13	1.97		
EN	11.0	6,150	0.5	1.0	6.1			79%	29%	3	26	59%	2.21	3.09	65	225
CP	9.9	15,250	11.2	19.0	7.6					4	17	39%	2.87	3.93		84
JB	11.0	10,250	3.5	6.0	1.5			19%	40%	4	10	39%	2.11	4.79	110	118
FT	12.0	9,400	3.5	20.6	11	0.4	2	27%		4	28	19%	2.0	4.0		200

* Key to abbreviations of tests:

BB-D Direct serum bilirubin in mgm./100 cc.
BB-T Total bilirubin in mgm./100 cc.
AP Alkaline phosphatase in Millimod units
UU Urine urobilinogen in units in a two hour urine sample
FU Feces urobilinogen in mgm. per 24 hours
PT Prothrombin in per cent of normal
BROM Bromsulphalein, 5 mgm. per cc. in per cent retained
CC Cephalin cholesterol, 0 to 4 +
TT Thymol turbidity in units
CE Cholesterol esters in per cent of total
SA Serum albumin in gm./100 cc.
SG Serum globulin in gm./100 cc.
SI Serum iron in micrograms/100 cc.
TC Total serum cholesterol in mgm./100 cc.

TABLE VI

ELECTROLYTES AND NPN STUDIES CORRELATED WITH ASCITES

CASE	NPN	CO_2	Na	K	Cl	ASCITES
MB	117	12.6	111	5.4	82	yes
FY	30	24.4	131	4.6	102	no
MMc	42	21.8	146	5.1	102	no
EA	102	11.9	127	5.0	103	yes
AC	Too high to read	34.2	130	2.6	87	no
PK	34					yes
LT	65	25	127	4.6	113	yes
KB	37	16.6	138	5.0	97	yes
JN	37	28.8	455	mgm.% as	NaCl	yes
IT	101	18.5	128	4.5	105	no
WR	33					no
NS	46.6	17.9				yes
EW	70	13.5	132	4.1	89	yes
CB	34	29.4				no
LT	215					no
EY	50	10.6	500	mgm.% as	NaCl	yes
CW	30		490	mgm.% as	NaCl	yes
WE	30	18.9	128.9	5.3		yes
ZM	105	28.9	360	mgm.% as	NaCl	no
FR	60	18.5				yes
TL	44	30.6	127	3.1	94	yes
PD	28	24.7	125	4.5	107	yes
EA	159	25.0	138	5.0	108	yes
HF	56	20.3	132	4.5	105	yes
CG	32.5	23.0	130	4.5	101	yes
HJ	32	32.2	123	5.2	111	yes
HB	33	23.2	139	4.9	102	no
KS	39	18.5	123	4.3	98	yes
WM	45	11.0	119	8.1	96	yes
BP	32	18.5	123	5.1	93	yes
GC	28.5	17.8	132	4.7	98	yes
MJ	37	20.3	127	4.9	108	yes
RG	43	17.8	122	7.2	98	yes
AM	35.8	30.6	130	5.9	98	yes
PC	98 (BUN)	14.0	120	9.2	115	yes
JG	55	20.7	156	3.5	126	yes
EMS	46.3	25	131	5.8	94	yes
RB	17.5 (BUN)	16.8	110	6.8	83	yes
AH	42	27.0	131	4.3	96	yes
EN	8.6 (BUN)	23.2	137	4.3	104	yes
CP	58	20.3	112	5.6	87	yes
JB	11.0 (BUN)	19.5	128	4.4	91	yes
FT	30					no

Only four of these patients survived and were dismissed from the hospital. Of the 39 who expired, three patients had survived one episode of coma previously. One of these died in a second episode. One survived the second episode, but succumbed to a pulmonary embolus several weeks later. The third patient after being in coma 38 hours of his third episode finally succumbed.

The blood ammonia concentrations of the 100 normal blood donors (Group II) is presented in Figure 1. The values ranged from 34 to 133 micrograms with a mean of 79.5 (standard deviation 2.68) micrograms per 100 milliliters. Figure 1 shows the percentile distribution of the blood ammonia concentration in this group of 100 normal persons. Only one individual had a blood ammonia concentration below 50 micrograms per 100 milliliters. The blood ammonia of six individuals was over 110 micrograms per 100 milliliters. Since 93 per cent of this group had blood ammonia levels between 50 and 110 micrograms per 100 milliliters, this range was arbitrarily selected as representing the normal blood ammonia. We consider blood ammonia levels between 111 and 135 micrograms per 100 milliliters to be in a borderline zone between normal and abnormal. However, values over 135 micrograms may be considered definitely abnormal.

Table VIII lists the blood ammonia levels in eight patients with hepatic coma. Three patients (PC) (EN) and (GC), had normal blood ammonia levels, while the remaining five patients had abnormally high blood ammonia levels on at least one occasion.

Table IX lists the blood ammonia levels in six patients with liver disease who were not in pre-coma or coma states. All six had normal ammonia levels.

DISCUSSION

We use the term hepatic coma because of its widespread use and general acceptance. No term so far suggested seems entirely satisfactory,

although "portal-systemic encephalopathy" of Sherlock(4) expresses the clearest connotation of the clinical picture and pathogenesis.

Liver cell failure may occur in all forms of hepatic disease, but is most often associated with cirrhosis and acute hepatitis of viral or toxic etiology. Many features may accompany this hepatocellular failure, such as jaundice, ascites, endocrine disturbances, and circulatory changes. This discussion, however, is limited primarily to certain features of the central nervous system dsyfunction.

Mechanisms of these neurologic manifestations have been the subject for much study during recent years. Sherlock's(7) explanation of the pathogenic factors include 1) portal venous-systemic collateral circulation, 2) defective liver cell function, and 3) nitrogenous substances in the intestine. This is the most lucid interpretation yet offered. Decreased liver cell function or by-passage of intact liver cells through portal venous-systemic collaterals gives access for high concentrations of ammonia to the central nervous system.

The clinical manifestations of hepatic coma may be divided into stages of pre-coma and coma. Depending upon the underlying type of liver disease, the clinical features may differ.

A typical example of the manifestations of the stage of pre-coma in severe parenchymal damage is often seen in the young child or adult with acute viral hepatitis. The disease may be ushered in with the usual gastrointestinal symptoms and jaundice. Within four or five days of onset the patient may suddenly and surprisingly become irritable, emotional, complain of severe headache, and somnolence. Response to questioning may be fairly normal, but may also reveal the patient's apparent irascibility and severe irritability. Conversational response may be strangely repetitious. A characteristic moaning cry often is spontaneously manifested by the patient while apparently sleeping. Upon awakening him you may secure no real evidence or reason for the apparent pain. Sensory defects and neurological deficit are not present in the pre-coma stage. Pre-coma may exist for a matter of several days terminating in complete return to normal, or advance to severe coma within a matter of eight to 12 hours.

Pre-coma in the cirrhotic patient presents a similar picture, but slight differences have been

TABLE VII

FACTORS PRECIPITATING HEPATIC COMA

FACTOR		NUMBER (43 Cases)
Gastrointestinal bleeding		21
Drugs		9
Ammonium Chloride	3	
Barbiturates	2	
Narcotics	1	
Acetazoleamide	1	
Amino acid preparation	1	
Cation exchange resins	1	
Infection		3
Paracentesis		3
Surgery		2
Alcoholic debauche		1
No factor identified		4

TABLE VIII

BLOOD AMMONIA LEVELS IN HEPATIC COMA

Patient	Diagnosis	Blood Ammonia (micrograms per one-hundred milliliters)
ES	Laennec's Cirrhosis	130, 169, 80, 254, 207, 59
JB	Laennec's Cirrhosis	197, 90
CP	Laennec's Cirrhosis	127
PC	Postnecrotic nodular cirrhosis	101, 70
EN	Postnecrotic nodular cirrhosis	72
AM	Biliary cirrhosis	141, 131
RG	Primary carcinoma of liver	104, 108, 122, 186
GC	Metastatic carcinoma of liver	91
GJ	Massive hepatic necrosis (Acute infectious hepatitis)	490
AP	Massive hepatic necrosis (Carbon tetrachloride intoxication)	176

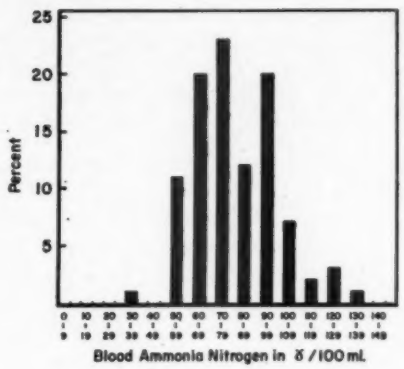
TABLE IX

BLOOD AMMONIA VALUES IN PATIENTS NOT IN COMA

Patient	Diagnosis	Blood Ammonia (micrograms per one-hundred milliliters)
LC	Laennec's Cirrhosis	83
JF	Laennec's Cirrhosis	74
ES	Laennec's Cirrhosis	69
GS	Laennec's Cirrhosis	61
EN	Postnecrotic nodular cirrhosis	84
PL	Serum Hepatitis	88
HB	Thorazine Hepatitis	74

FACTORS PRECIPITATING HEPATIC COMA WHICH ARE CAPABLE OF INCREASING BLOOD AMMONIA LEVELS

FACTOR	NUMBER (43 Cases)
Blood in Gastrointestinal Tract	21
Ammonium Chloride	3
Amino Acid preparations	1
Cation Exchange Resins	1
Acetazoleamide	1
TOTAL	27



observed. This patient, while showing no signs of worsening of his liver disease, may first complain bitterly of his care and the attention he is receiving. Such complaints heard from a previously happy patient may be the first subtle evidence of personality changes of pre-coma. Again, repetitious answers to questions may be obtained. Irritability, disobedience, and obtuseness characterize the patient's mental attitude. Aside from slight tremor and muscle twitching, neurological findings are minimal. All exhibited signs may disappear or progress to coma.

Coma in severe parenchymal cell damage and massive necrosis, as seen in the child and young adult, may present initially as extreme irritability and continue through delirium, mania, semicoma, and the usually irreversible deep coma. Central nervous system dysfunction may be characterized by motor weakness, flaccidity, spasticity, pathological reflexes, severe tremors, and rarely convulsions. Jaundice is usually very deep and fetor hepaticus is common. Recovery in this stage is uncommon in our experience.

Deep coma in the cirrhotic patient regularly follows a long history of liver disease. Usually it is preceded by bleeding, infection, alcoholic debauch, injudicious use of drugs or the presence of abnormal nitrogenous material in the gastroinestinal tract. Most commonly the patient is brought into the hospital shortly after massive bleeding from esophagogastric varicosities. Within the next 24 hours the patient shows small personality alterations, becomes irritable, perhaps continues to bleed, refuses all medications and attentions, becomes less responsive to stimulation and drops into deep coma. The respiration may be deep and labored as in acidosis. Jaundice, fetor hepaticus, and abnormal neurological signs are usually present. Electroencephalographic(8) changes are quite characteristic. In contrast to the patient with massive hepatic necrosis recovery is not uncommon. Such recovery likely points to fairly intact parenchymal liver cells and strengthens the theory of shunting phenomena either through or around the liver allowing access of some abnormal metabolite to the central nervous system.

The characteristic features of coma as seen in this group of patients and outlined above is composite of cases BP, CP, CA, MMc, and EN. Irritability, confusion, lethargy, flapping tremor and fetor hepaticus formed the most helpful symptoms and signs in predicting that coma was imminent.

Biochemical liver function tests were not helpful in predicting the onset of coma. For several years we have been impressed with the value of serum iron determinations in detecting the amount of parenchymal cell damage in patients with liver disease.(9)(10) Invariably this value is extremely high in patients with massive necrosis. Patient MMc is a good example. The serum iron value does give some indication as to the outcome of coma in such a patient. The degree of depression of cholesterol esters roughly parallels the elevation of the serum iron and aids in the prognosis of coma in patients with marked liver cell destruction. Neither of these values are helpful in the patient with cirrhosis unless death of liver cells occurs. The serum iron level in particular may be normal or low in the patient with cirrhosis. This was true, for instance, in the case of EN.

It is commonly stated that patients in hepatic coma develop hypoglycemia. Hypoglycemia was not observed in any of the patients in this series.(11)

The importance of ammonia in the pathogenesis of hepatic coma has recently been emphasized. Such relationship was suspected by Matthews(12) in 1922, when he noted coma in Eck fistula dogs after they had been fed on high protein diets. Elevated blood ammonia values in both cirrhosis and hepatic coma have been noted by several investigators. (4,13,14,15) Two factors seem to be significant in this situation: 1) the presence of excessive nitrogenous substance in the intestinal tract, and 2)

the bypassing of parenchymal liver cells by the portal blood with its high ammonia content. The patient with massive cellular destruction of the liver can not accomplish normal ammonia metabolism, but for a different reason than the patient with cirrhosis. Both may, and do, develop hepatic coma.

The liver is the most important single organ concerned with protein metabolism, illustrated by its recognized responsibility for formation and deamination of most amino acids. Ammonia from the latter reaction is converted to urea by the liver. It is intriguing to conjecture that in severe liver disease there is a failure to perform these functions and as a result an unusual accumulation of ammonia occurs in the blood. It is possible that the toxic ammonia ion through its effect on the central nervous system produces hepatic coma. We have also observed certain similarities in terminal patients with congestive heart failure and patients with hepatic coma. This has led to the speculation that blood ammonia levels in the patient with congestive hepatomegaly may also be elevated.

Walshe(13) theorizes that an abnormality of glutamic acid metabolism is responsible for the neurological changes recognized as hepatic coma. Glutamic acid is unique as the only amino acid supporting cellular respiration in the brain. It is also the one substance suggested as having the ability to detoxify and prevent accumulation of ammonia within the brain. Glutamine, the end product of this reaction, was found by Walshe(13) to be present in abnormally high concentrations in the spinal fluid of patients in hepatic coma.

Kirk's(16) study of ammonia metabolism in liver disease 20 years ago was not followed by attempts at clinical correlation until recently. Gabuzda, et al(17) reported the syndrome of impending hepatic coma in patients with cirrhosis given cation exchange resins. Since these resins exchange ammonia for sodium, it was felt they led to an elevated blood ammonia. McDermott and Adams(18) reported a patient in whom an Eck fistula had been produced during surgery for carcinoma of the pancreas. Typical symptoms of impending hepatic coma could be produced by feeding the patient a high protein diet, urea, ammonia chloride or ammonium containing exchange resins. Traeger (15) fed four patients with cirrhosis ammonium chloride and noted higher elevations of blood ammonia levels, and more sustained levels than in four normals given the same dose of the drug. White, et al(19) with ammonium chloride tolerance tests, demonstrated similar phenomena.

It was felt that ammonium chloride administration led to hepatic coma in three instances (WA, CB, and PD). One patient (EA) who had had a portacaval anastamosis received amino acid preparations intravenously following surgery. His post-operative course had been uneventful until that time. On the fourth day, while receiving this agent, he developed typical hepatic coma and expired shortly thereafter. One patient (TL) had two episodes of coma quickly following the use of exchange resins. He recovered from both episodes only to expire later from pulmonary emboli. Of special interest is patient (HF) who had diffuse hepatic fibrosis with ascites. His course was uneventful until he received acetazolamide (Diamox) as a diuretic. Within 24 hours he had developed hepatic coma from which he did not recover.

Acetazolamide (Diamox) blocks carbonic anhydrase in the kidney, and hydrogen ions necessary for the conversion of ammonia to the ionic form are not produced. Without this conversion, ammonia produced by the kidney to conserve base is not excreted in the urine, but absorbed into the blood. In patients with severe liver damage or shunting phenomenon, abnormally high levels of ammonia might soon be reached.

Gastrointestinal bleeding is generally recognized as a precipitating factor in hepatic coma. The explanation for this relationship envisions the liver as being much dependent upon the portal blood flow for its oxygen supply, and bleeding episodes resulting in disproportionate reduction in portal over systemic flow may seriously impair the already damaged liver parenchyma. We feel that a much more pertinent factor is the absorption into the portal blood of breakdown products from blood in the gastrointestinal tract. Twenty-one of the patients in this series had major bleeding into the gastrointestinal tract prior to the appearance of symptoms of coma.

Although the exact mechanism is not clear, more and more evidence is accumulating to indicate that increased ammonia levels are important in the pathogenesis of hepatic coma. In

the limited number of patients in whom blood ammonia levels were determined in this study, high values were associated with hepatic coma, but coma was found to exist in the presence of normal values also.

Other precipitating factors were demonstrated in this study. Since some of these may be avoided in future cases, their recognition is in itself important as a preventive measure. Paracentesis for relief of ascites in liver disease has been frequently followed by hepatic coma and may also be considered a contributing factor in pathogenesis. Two of our patients (CP) and (MB), developed coma shortly after paracentesis, and another (EY), already in coma, became worse.

Patients with severe liver disease seem clinically unable to tolerate opiates and barbiturates. In three of our patients (MB, FY, NS) such agents seemed to be contributing factors in the development of hepatic coma.

Since treatment of patients in hepatic coma is so woefully inadequate, early recognition of the precipitating factors and prevention of this complication is of the utmost importance.

In either the case with marked parenchymal cell damage or with diffuse hepatic fibrosis and portal venous systemic shunting, diet, vitamins, attention to fluids as well as certain restriction of activities are necessary. While the high protein diet has been advocated for some time, there is now evidence to suggest that the protein may need to be restricted in patients with severe liver disease.(20) Barbiturates and narcotics should be used only with caution. Compounds containing ammonia or those that will increase body ammonia, such as acetazolamide (Diamox), cation exchange resins and amino acid preparations, should be avoided.

Prevention of gastrointestinal bleeding is in order, if possible. The use of anti-acids and other efforts made for the patient with peptic ulcer are indicated in the patient with known varicosities of the esophagus. Quick control of bleeding by tamponade is practical and occasionally lifesaving. Once bleeding has occurred, clearing the intestine of blood seems logical to avoid absorption of breakdown products.

Paracentesis should be done with caution, and only if indicated by considerable discomfort of the patient. Steroid therapy may be of value in the treatment of hepatic coma.(21, 22) In four of our cases temporary improvement followed their use.

Walshe(23) has recently reported the successful use of intravenous sodium glutamate in hepatic coma. Two of the patients (JB and ES) who had repeated blood ammonia determinations were treated with monosodium glutamate in addition to the usual supportive measures. The blood ammonia of one of these patients (JB) fell from 197 to 90 mocrograms in a matter of four days after receiving a total of 86 grams of monosodium glutamate. The other patient (ES) was in deep coma for 12 days and would not respond to any stimuli. During the last eight days of her life, she (ES) was given 23 grams of monosodium glutamate intravenously daily. After three days of this therapy, the patient came out of coma for a few hours and was able to answer questions. At this time, her blood ammonia concentration had dropped from 169 to 80 micrograms. However, this patient rapidly regressed back into coma and developed marked elevation of her blood ammonia level terminally. In these two patients the administration of monosodium glutamate resulted in a temporary improvement of the patient's symptoms and a lowering of the blood ammonia level; the eventual outcome, however, was unaltered.

SUMMARY

1. Forty-three patients with hepatic coma have been studied at this institution between January 1947 and August 1955 by our group. The symptoms, signs, and laboratory findings that we observed in these patients were similar to those previously reported in the literature.

2. In 39 cases, a factor precipitating hepatic coma was strongly indicated. Twenty-one patients had evidence of gastrointestinal bleeding with blood in the intestinal tract prior to the onset of coma. In six patients substances capable of increasing the blood ammonia were given. Therefore, a total of 27 patients were exposed to situations which would cause an elevation of the systemic blood ammonia level prior to coma. Infection was suspected in three and paracentesis in the same number. Barbiturates and opiates have been listed in two instances.

3. Blood ammonia concentrates were determined in 100 normal persons. Values between 50 and 110 micrograms per 100 milliliters were considered normal. Values between 111 and 135 micrograms per 100 milliliters were considered to be borderline, and values over 135 micrograms per 100 milliliters were considered definitely abnormal.

4. Present concepts as to the role of ammonia in the pathogenesis of hepatic coma have been reviewed. The correlation of blood ammonia levels in 14 patients in our own material have been presented.

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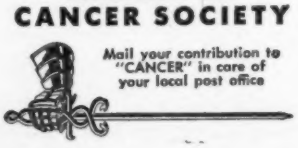

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The Effect of D.H.E.-45® and Bellafoline® on the LD_{50} of Centruroides sculpturatus Ewing Scorpion Venom

By Herbert L. Stahnke, Ph.D.
Director, Poisonous Animals Research Laboratory
Arizona State College, Tempe, Arizona

IN 1953, Mohammed and Karemi reported that the combination of D.H.E.-45 (Sandoz) and Bellafoline (Sandoz) acted as an antidote to scorpion toxin. Although they did not indicate the species of scorpion involved, it was assumed from some of their previous work that **Buthus quinquestriatus** was used. This species and our **Centruroides sculpturatus** produce a powerful neurotoxin. Since both venoms have much in common, we decided to test the effect of this combination on the venom LD_{50} of our Arizona lethal species.

"Dihydroergotamine methane-sulfonate is a crystalline, semisynthetic alkaloid obtained from ergotamine by hydrogenation of the double bond in the lysergic acid radical. Bellafoline® is a chemically pure stable alkaloid complex isolated from fresh belladonna leaves, containing no atropine. It comprises the levorotatory alkaloids of belladonna as malates."(1)

The above mentioned investigators found that with albino rats of 200 gm. body weight, the "best protective combination was Bellafoline 0.5 mg. and dihydroergotamine 0.1 mg. This mixture injected simultaneously with the toxin saved rats injected with as much as three times the minimal lethal dose of toxin."

Our measure of bio-assay is the LD_{50}. Therefore, using the method of Weil (1952), we used a dosage combination of 0.5 mg/100 gm. rat body weight of D.H.E.-45 (Sandoz) with 0.25 mg/100 gm. Bellafoline (Sandoz). The LD_{50} of the lot of **C. sculpturatus** venom was 0.096 mg/100 gm. with a Confidence Interval of 0.085 to 0.109 mg/100 gm. The Da was 0.091 mg/100 gm. with R at 1.26, n = 3, and K = 3. After the venom was administered each animal received the dosage of D.H.E.-45 and Bellafoline as indicated above.

RESULTS

The mortality at the four dosage levels was 0, 0, 1, 2. Using Weil's formula Log m = Log Da + d (f + 1), the LD_{50} of the venom was now 0.172 mg/100 gm. with a Confidence Interval of 0.117 to 0.251 mg/100 gm.

DISCUSSION

The range of the two Confidence Intervals indicates that the difference between the two LD_{50}'s is significant and that the combination of D.H.E.-45 and Bellafoline, in the proportions used is antagonistic to **C. sculpturatus** venom. These results, as well as those of Battat (1954) with Egyptian scorpions, suggest that a combination of these drugs could constitute desirable supporting therapy for cases of venenation with a neurotoxic scorpion venom. More research work is indicated, however, in order to find the most desirable proportions of these agents and whether or not they might be used, in proper quantities, as the only necessary therapeutic agent.

*Dihydroergotamine methane-sulfonate (D.H.E.-45, Sandoz) and Bellafoline (Sandoz) supplied by Sandoz Pharmaceuticals Division, Sandoz Chemical Works, Inc., San Francisco 8, California.

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THE *President's* PAGE

I AM VERY grateful for the honor you have bestowed on me and humble in the knowledge of the responsibility of the position. I only hope I can do as good a job as my predecessors. Any success will be in the committees and their functioning in the fields to which they are appointed. Also, we must try to have more doctors active in all phases of organized medicine. Please do not refuse to serve and then criticise that "the old crowd is running everything."

We must maintain and strengthen our vigilance against further encroachment into medical practice by federal, state, and local governments and by hospitals.

We must avoid dissesion in our own ranks such as was present in the British Medical Association that enabled the Socialist government to put into effect the National Health Service of Britain. The doctors of Belgium stood together and steadfastly refused to go along with a plan similar to England's. They were able then to state what plan of medical assistance they would support and what they would not support.

This was a unified association standing together. Unless we so stand, we will be in the plight of the Britishers.

We must assume our full civic duties. It is a duty as well as a privilege for the American to be able to vote. This applies to school elections as well as national, state, and local elections. Also, the school boards spend more of your tax dollar than Uncle.

I would like to propose a contest between doctors, dentists, lawyers, and druggists to see which group will have the highest percentage of voters at, say the next general election. It would bring out some interesting figures to find which group is most active at the polls.

The Arizona Medical Association is called upon to sponsor and give support, or disapproval, to all health bills in the state legislature. We know the contents of the bills we sponsor. The ones introduced by others, we may not even hear of until introduction. These latter may be good, good in principle and poor in legality, etc., or may be very opposed to others.

If any group, with doctors on its board, is planning to introduce a bill in the legislature, we ask that you bring to the attention of the sponsors our procedures. The legislative committee meets and approves or disapproves the measure and makes recommendations to council of A.M.A. The council must then pass on the measure and/or a recommendation. Then, and then only, can the legislative chairman express the will of the Arizona Medical Association. The proposed mental health bill, or commitment bill, was not actually introduced. A copy of the proposed bill was first seen by Doctor Hamer about Feb. 7. Mr. Jacobsen rushed through a legal opinion in three days. He should have had at least a month. The bill should have been given to Doctor Hamer by Oct. 1 to permit proper study.

This may be a very controversial proposal, but I feel that we should have a published fee schedule. This should be our average fees and should be so stated. I will propose this to council for their decision, whether it should be studied by a regular committee or a special one. Our lack of a fee schedule approved by you made the negotiations for Medicare much more difficult. More and more the need for such a schedule becomes apparent.

I now come to a subject about which I feel we should forcefully assert ourselves. More and more the hospital administrators are telling us what we have to do. It is apparent that the hospital administrators are pushing their way into medical practice, out-patient clinics, semi-charity deliveries. Wesley Hospital, Chicago, has 150 doctors who have no offices except Wesley Hospital. The doctor is becoming a very profitable adjunct to the hospital.

"The tendency for hospital corporations to invade the practice of clinical medicine through the agency of employed physicians has been a matter of growing concern among medical organizations. In the opinion of GP, hospitals should be regarded as specifically equipped institutions where private physicians can render service to the sick. They should not be permitted

to become corporate distributing agencies for medical care." (March 1957 editorial GP, volume XV – number 3, page 69.)

A hospital's function is solely to care for patients. A doctor's duty is first and foremost to his patient. The patient must have free choice of hospital as well as free choice of physician. Yet the joint commission says we can belong to only one staff and meet their requirements. I do not know about Yuma, but in Phoenix, hospital beds are at a premium, four to six weeks in advance for elective surgery.

At $25 and $30 per day average cost, the hospitals are rapidly pricing themselves out of the market.

With all the increased regulations, the hospitals have had to steadily increase the staffs of the record room. This has increased hospital overhead. Yet, from this the patient receives no better care, only increased cost. The patient is really the "low man on the totem-pole." Will this increased overhead in the record room improve the care and treatment of the patient one iota? I doubt it!

I call for your constant vigilance against encroachment on our profession from all sources. There are things to be done. Let us not be backward in what we believe to be the right. May I quote from the "Prayer of Confession."

> "We have done those things which we ought not to have done, and have left undone those things which we ought to have done."

C. C. Craig, M.D.

ADVANCES IN PEDIATRICS, Vol. 9 edited by S. Z. Levine. 336 pages. Illustrated. (1957) Year Book. $9.

The ninth volume in this annual offering discusses postmaturity, gamma globulin, thyroid disorders, familial dysantonomia, florides and dental caries, coagulation disorders, and celiac disease.

Stacey's Medical Books, San Francisco

FIFTY YEAR CLUB

"FIFTY YEAR CLUB" was organized in 1948. The Club consists of those members of the Association who have been in practice for 50 years or more. Members to date, with year of M.D. degree are:

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ANAESTHETIC ACCIDENTS: The Complications of General and Regional Anaesthesia by V. Keating, M.D. 261 pages. (1956) Year Book. $5.

They do happen and here is a small, honest, and interesting volume that deserves to be read and studied. We suspect that it is a labor of love by a lonely specialist in the Royal Army Medical Corps.

Stacey's Medical Books, San Francisco

CORRECTION

Note correction, page 276, Volume 12, Number 5, May 1957, article, "A Brief Summary of the Present Day Therapy of Collagen Diseases" by Harry E. Thompson, M.D. and Harold J. Rowe, M.D. In paragraph 10 of this article starting, "In Rheumatic Fever." The sentence "In the severely ill patient, large doses of Prednisone, Prednisolone or ACTH may be necessary to suppress the hyperthermia and minimize the undesirable edema, hypertension and gastritis" should read, "In the severely ill patient large doses of Prednisone, Prednisolone or ACTH, may be necessary to suppress the hyperthermia and minimize the acute myocardial and valvular damage. The dosage should be reduced as soon as possible to minimize the undesirable effects of these steroids i.e., salt retention, edema, hypertension and gastritis."

Editorial Page

ARIZONA MEDICINE

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notifed within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
9. Reprints — Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

CONTRACT PRACTICE

RECENT discussions between the A.M.A. Committee on Medical Care for Industrial Workers in Chicago as represented by Dr. William A. Sawyer of Rochester, the chairman of this committee and Dr. Warren F. Draper, the Executive Medical Director of the U.M.W.A. Welfare and Retirement Fund reiterate the problems regarding the relationship between this or any company or union fund and physicians or medical societies.

Their problems again bring into focus the fact that (1) most of these policies adopted by a fund will in effect reduce or eliminate the right of the worker to select a physician or hospital; (2) invariably there is an assumption by the fund of the prerogative of judging the quality of treatment given by physicians, their qualifications for hospital appointments, and an effort at selection of hospital staffs; (3) the actions of the fund departments from fee-for-service remuneration; (4) strained relations develop between medical societies and the area medical administrators because of alleged officious and paternalistic actions by area administrators.

These are inevitable deficiencies of this type of planned medical practice, and steps to guard against them are essential. The delegates are to be commended upon their recent establishment of a specific committee for representation of the medical profession in the development of any of the future industrial insurance policies of the state which carry medical benefits.

CARCINOMA OF THE BREAST: The Study and Treatment of the Patient by Andres G. Jessiman and Francis D. Moore, M.D. 135 pages. Illustrated. (1916) Little, Brown. $4.

An extension of a progress report, initially published in the New England Journal of Medicine, presents an integrated study of patients with carcinoma of the breast in the light of current knowledge and research relating endocrine and metabolic aspects to surgical care.

Stacey's Medical Books, San Francisco

LETTERS TO THE EDITOR

MEDICAL EDUCATION

Editor, Arizona Medicine:

THIS LETTER will serve to recall to you our conversation at luncheon recently. You will recall that we discussed several aspects of the student exchange program of the Western Interstate Commission.

I think everyone will agree that the motives of the legislature were excellent and very commendable when they set about to include our people in the Western Interstate Commission program. This program is not meant to provide scholarships, but it is designed to aid students in medicine, dentistry and veterinary medicine to the extent that they can attend professional schools in these fields in one of the 11 Western states at approximately the same financial cost as the student who is a legal resident of the state in which the school in question is located. To this extent, the state partially makes up for the fact that we do not ourselves have these professional schools available, and it relieves the eligible student from the necessity of paying out-of-state tuition. It does seem a little unfortunate, however, that the restrictions on eligibility are so severe. As a matter of fact, the restrictions on the Arizona student are much more severe than they are on a student from any other state. To be eligible for certification under this state program, a student must have been a bona fide resident of the State of Arizona for at least the last 10 years. Since roughly 40 per cent of the population of the state has been here less than 10 years, this would seem to eliminate an unduly large percentage of our potential students. Although one can understand why the legislature wished to be rather careful about who becomes eligible for this financial assistance, the fact remains that a newcomer becomes eligible to vote in this state after one year's residence, that he becomes eligible to attend the state university and the state colleges without paying non-resident tuition after one year's residence and he certainly becomes eligible to pay taxes to the State of Arizona long before one year's residence is completed.

The other restriction put upon the Arizona student that seems a little extreme is the requirement that he agree to return to practice in this state two years for each year he received his out-of-state tuition under the contract program. This means that the student who spends four years in medical school under this program has obligated himself to practice the first eight years of his professional life within the State of Arizona. If he does not do this, he then must repay to the state the sum of $8,000 with interest. Here again, one can understand the legislature's wish to secure medical services for the people of the state and to retain the services of those who have been trained at the expense of the taxpayer's money. On the other hand, the taxpayer's money also operates the university and state colleges and there is no restriction put upon the graduates of any of these schools or colleges within these institutions. The Arizona student may graduate and leave the state within 24 hours, never to return. This is, of course, as it should be. But the more one thinks along these lines, the more one wonders whether or not this restriction on the student who undertakes a professional education under the student exchange program isn't rather excessive. No other state puts such a severe restriction upon its students; most of them have no restriction whatsoever.

H.R.

KUDOS AND WARNING

Editor, Arizona Medicine:

KUDOS AND commendations are due our past president, Dr. Podolsky, and our newly elected secretary, Dr. Smith. The former for his forthright and perceptive discussion of present legislative and socio-economic trends as presented on The President's Page. We hope he and others will continue to "squawk like hell." The latter for his editorial entitled The Nylon Nightie, which so effectively deals with the hate-fomenting articles too frequently appearing in our lay magazines.

American medicine has steadily lost ground to socialization since 1950, suffering one defeat after another that could have been avoided.

We have permitted our fine impulses of sympathy and concern for the less fortunate, the exploited, and the incapacitated to lead us into accepting nostrums, cleverly suggested by conspirators. We did not recognize that we were introducing authoritarian plans into a society of free men; and that each such action was as dangerous to free men as the relaxation of con-

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For broad antibacterial effectiveness: KYNEX is particularly efficient in urinary tract infections due to sulfonamide-sensitive organisms, including E. coli, Aerobacter aerogenes, paracolon bacilli, streptococci, staphylococci, Gram-negative rods, diphtheroids and Gram-

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positive cocci. **For convenience:** the low dosage of 1 Gm. (2 tablets) per day offers optimum convenience and acceptance to patients.

Tablets: Each tablet contains 0.5 Gm. (7½ grains) of sulfamethoxypyridazine. Bottles of 24 and 100 Tablets.

Syrup: Each teaspoonful (5 cc.) of caramel-flavored syrup contains 250 mg. of sulfamethoxypyridazine. Bottle of 4 fl. oz.

1. Boger, W. P.; Strickland, C. S.; and Gylfe, J. M.: Antibiot. Med. & Clin. Ther. 3:378 (Nov.) 1956.

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trols are to dictators. We have demonstrated an inability to recognize programs aimed at superficially desirable objectives which camouflaged actions aimed at destroying our society. Socialization of medicine is but a part of the overall plan. It is a tragic fact that our system is so virile that it seems flourishing even as it is being destroyed. The few who have the courage to try to raise the backdrop and disclose what is backstage, are subject to the indifference and ridicule of the majority whose apathy is such that they wouldn't believe it if they saw it!

It is up to those within the medical profession to expose socialization for what it really is in all its evil aspects. More articles such as these are sorely needed to awaken the profession. Medicine should share in the growing revolt against the destruction of our American way of life.

L. D. Sprague, M.D.

NONINFECTIOUS PLASMA

Editor, Arizona Medicine:

I AM TAKING the opportunity of sending you reprints of a study by Dr. Paul Hoxworth and Dr. Walter Haesler of Cincinnati, on Safety of Stored Liquid Plasma. There are also two copies of an abstract of this reprint. I think this is a very timely study and a very important one, and one that should be circulated among the members of the medical profession in Arizona through Arizona Medicine. These studies confirm what has been our impression; that plasma stored at room temperature for six months to a year is virtually noninfectious as far as serum hepatitis is concerned. I feel that it is unfortunate that liquid plasma has acquired such a bad reputation because of the high case rate of serum hepatitis following the use of lyophilized plasma. I feel that there are definite indications for the use of plasma where it is preferable to use plasma rather than whole blood, and that if the safety of this product is shown to the members of the medical profession in this state, it might result in better patient care in those cases where blood products are indicated.

James D. Barger, M.D.

(Editor's note: See Topics of Current Medical Interest in this issue.)

Help these hands to serve!

● These hands are working in the tremendous fight against cancer, in the laboratories and in the hospitals, in your town and on your street.

With more tools, more dollars—they could save twice as many lives even now. Perhaps tomorrow they could shift cancer from its position as Number 2 killer to a controlled and curable disease.

Thousands of lives—maybe even yours—depend on these hands. ***Give all you can to help them serve you.***

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- oral b.i.d. dosage
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The new, highly effective oral diuretic, Rolicton, greatly simplifies the task of maintaining an edema-free state in the patient with congestive heart failure. Rolicton meets the criteria for a dependable diuretic: continuous effectiveness, oral administration and clinical safety.

In extensive clinical studies the diuretic response clearly indicates that a majority of patients can be kept edema-free with Rolicton. In these investigations it was noted that side reactions were uncommon. When they did occur they were usually mild.

In most edematous patients Rolicton may be employed as the sole diuretic agent. When used adjunctively in severe cases, Rolicton is also valuable in eliminating the "peaks and valleys" associated with the parenteral administration of mercurial diuretics.

One tablet of Rolicton b.i.d., after meals, is usually adequate for maintenance therapy after the first day's dosage of four tablets. Some patients respond well to one tablet daily. G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

SEARLE

The History of Medicine in Arizona

SMALLPOX

By N. C. Bledsoe, M.D.

SMALLPOX, which had been the scourge of the world before the discovery of vaccination by Jenner, was still a dreaded disease in the early 1900s. Compulsory vaccination had not reached its maximum benefits. Along the Mexican border smallpox was still quite prevalent. In 1906 I was appointed assistant health officer of the Bisbee district, and at this time the so-called "Pest House" was located on the edge of the garbage dump. It consisted of a one room shack where the inmates cooked, ate and slept. Some individual who had had the disease was installed as nurse. It was isolated. The laity believed that whiskey was the medicine of choice and the saloon keepers kept the inmates plentifully supplied. Later on an adequate and comfortable hospital was provided with a trained nurse in charge.

In 1906 an epidemic of smallpox broke out in Tin Town, most of the houses in that section being made from flattened five gallon oil tins. There were six or eight cases of smallpox and about 20 people had been in actual contact with the six. These latter were placed in isolation in a barbed wire enclosure and guards stationed around the camp. Tents were provided as well as food and medicines. Relatives did the nursing. Rounds were made every day, and on entering the camp I donned an old fashioned ulster, close fitting and hot, and cotton gloves, all of which were kept in a suitcase, doused in formaldehyde between wearings, and stashed under a mesquite until some thieving rascal stole the entire outfit. One night one of the internees escaped, and I searched for him through every house in Tin Town and was about to give up the search when an old Mexican woman called: "Senor, aqui esta un viruela!" (There is one with smallpox here) and pointed to an abandoned frame shack. Looking in I saw a cot, unoccupied, and behind it a man crouching. It was my escapee. I called the deputy sheriff to come and get him. He came, and as he was too lazy to send for a spring wagon (we had no ambulance) he told the fellow to get up on the horse behind him and in this fashion he was taken back to the camp. The deputy was loaded with spirits so he allowed he was immune from all ills.

There was one case which stands out in my mind very vividly. One of the young lads about 14 years of age came down with the disease and in 12 hours he was bleeding from the nose, mouth, bladder and rectum. It was a very fulminating case of "Black Smallpox." This one really scared me as I had never had the disease and I was to be married the following week, so I decided that I had better stay away from the smallpox victims. I explained my fears to my employers and while they laughed at me, they readily took over my task. No one can foretell how a given case may develop; some are mild and others virulent, and I was taking no chances. The following week the quarantine was lifted.

No one can doubt the efficiency of successful vaccination as the following case will demonstrate. An itinerant family consisting of a mother and three children, ages 19, six, and an infant, drove into Bisbee. The mother had smallpox. I immediately vaccinated the children, the only "take" was in the 19-year old girl. She got off with only a few lesions, but the two younger children had severe cases and died. The mother lived but was terribly disfigured. Thank God for vaccination.

PRACTICAL DERMATOLOGY by Samuel M. Peck, M.D., with Laurence L. Palitz, M.D. 375 pages. Illustrated. (1956) McGraw-Hill. $7.

Because of the recent introduction of many and potent therapeutic agents in dermatology, the general practitioners will find this volume especially timely and useful in daily practice.

Stacey's Medical Books, San Francisco

INTERPROFESSIONAL MEETINGS

Many county medical societies have found interprofessional meetings with other health groups to be invaluable in solving mutual problems or settling between-profession conflicts. Instead of waiting for the suggestion of a meeting to come from another group — why not evaluate your 1957 PR agenda right now. Have you scheduled meetings with local lawyers, dentists and pharmacists?

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1.0 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in orchid, scored tablets. Bottles of 100.

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advantages: (1) greater flexibility of dosage (2) effective tranquilization permits lower corticoid dosage

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

DOCTORS, ministers, and other philosophers have suggested that patients should have a better ATTITUDE TOWARD DEATH. It should be possible to adjust, especially for religious people, but there are obstacles, including family ties, indispensability, habit, fear, et al. . . . We hereby suggest an attitude which doctors, or some paramedical group, or a church group (or the women's auxiliary of the medical associations!) could use to form such societies. Older people and ill people could join together, or simply become members of 'THE COURAGEOUS TRAVELERS' or a similar titled aggregation. They could have as their slogan, "LIVE LONG; LIVE WELL; HAVE PEACE OF MIND; AND WHEN THE TIME TO GO ARRIVES, TO BE NOT AFRAID!" . . . They might be sustained by the mutual association, or by a publication, or by a medalion, and they could be proud of their group and action.

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People in Arizona hardly need the new Raytheon device which we have just seen advertised, but it is interesting to foreign readers of our journal. It is called the Micronaire Electronic AIR CLEANER, and it removes pollen, dust, smoke, bacteria, and all airborne particles to the extent of 99.2 per cent efficiency. . . . That's as good as the air in Tucson, says a man from Phoenix.

A hopeful note on COR PULMONALE was uncovered at the N. Y. State medical meeting. It used to be considered hopeless 10 years ago, but therapy may be very helpful and the condition be preventable, said Dr. M. Irene Ferrar of Baltimore. . . . The attack should be on the lungs rather than the cardiac insufficiency. The parent source may be pulmonary. . . . The plan of treatment should include anti-biotics, vaporized broncho-dilators, digitalization, phlebotomy, and carbonic anhydrase (to eliminate the carbon dioxide). . . . In California they also use IPPD (intermittent positive pressure breathing), but the eastern cases which come out West are sometimes tough to treat even with the entire armament of therapy.

Don't let your wife or secretary see this, but if they do, tell them it's the way the other half lives. Dr. Erle Henriksen, a gynecologist from U.S.C., says that "at least HALF OF ALL WOMEN ARE REGULARLY TRANSFORMED INTO TENSE IRRITABLE WITCHES. They raise hob with their husbands, children, bosses, and friends." . . . The cause is hormonal of course; it is cyclic; it persists for as long as 6 days; it produces a change in fluid balance, with an excess retention of water in the tissues, with the emotional effects arising from pressures on certain brain centers. The intelligent woman, the perfectionist, suffers most. It contributes to divorces, acts of crime, etc. . . . Dr. H. uses a diuretic (neohydrin, 2 or 3 per day) for his best results.

The Tuberculosis Control Law in Arizona is about a year old. It is hard to get a general view with only one pair of eyes, so we have tried to get five pair, three in Phoenix and two in Tucson. We are very grateful for the frank responses from all of these smart and busy guys, and we'd give them credit-lines if we hadn't promised anonymity. . . . Here is a series of only slightly conflicting comments from Phoenix, — "A good and fair law. It has worked out fairly well. It is just beginning to be accepted by patients and physicians. It looks and sounds good, but has accomplished little so far. . . . Many M.Ds. are hesitant about asking the health department to enforce. Some private doctors drag their feet; it may be honest belief, or bread-and-butter. Lots of cases are wrongfully getting home care. . . . The state, county, and city interpretation of the law differs, but conferences may solve, and a joint city-county health department would help, since most recalcitrants are in the city. . . . There is no 'detention section' in the County Hospital. The Arizona State Hospital has an unoccupied TB section which could be used. Detention acts as a deterrent, and is psychologically effective. A number of people have been quarantined, and the county attorney's office is becoming co-operative and helpful. The law has 'teeth', in spite of criticism, and old laws are supplementary. . . . The source of welfare assistance is uncertain; should it be welfare, or the TB control fund? The County

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Well versed in the field of insurance, Mr. Ashley was formerly Vice-president of a large mid-west Life Insurance Company operating in 31 states. With the firm 4½ years, Mr. Ashley was Director of the Underwriting, Policy Issue and Reinsurance, Claim Division, and Research departments. He also spent 2½ years as Secretary-Treasurer of another mid-west Insurance Company where he gained valuable experience.

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Hospital grabbed the funds intended for patients outside the hospital. . . . Several counties are now organizing health departments, and will then be able to use the law. . . Tucson is resisting the law!"

Here are the comments from Tucson: "The local health officer will not use the law; the reason given is the lack of isolation facilities. The health department says: 'TB has been here a long time; let's not get excited.' There is no real hurry, since it took California years to edge in on the problem. . . . The health department has not accepted help from M.Ds. The county attorney is willing to help if asked. The parent-teacher groups are becoming more demanding, due to skin-test programs. Some legislators are interested in TB control. The early 'violation of rights' cries have subsided, and they came from an anti-medical source. . . . Not enough money has been appropriated; it is used only for hospitalization. An active state TB control officer is needed (Feb. '57). Tucson is watching the Phoenix experience."

It would seem that the situation sounds possible, will take time, will require men (and women) of good will.

Capsule news item: A California osteopath, charged with FALSIFYING NARCOTIC PRESCRIPTIONS, claimed it was due to spelling errors. The D.A's. complaint also contained spelling errors. Verdict, not guilty. . . . He had written 75,000 narcotic prescriptions in his career. It didn't say how old he was.

STAFFORD WARREN is noted as the chief of radiological safety in construction of the atomic bomb, and versatile enough to have been founder and dean of the medical school at U.C.L.A. He has recently given his ANALYSIS AND CLASSIFICATION OF MEDICAL GRADUATES to a reporter for MEDICAL ECONOMICS. The article makes good reading. . . . Each new doctor tends to be one of three basic types: A MECHANIC, A SCIENTIST, OR A HEALER. . . . The "mechanic" isn't really interested in pure science, can't understand it very well, and got through school by a strong personality and ability to memorize. He can do a good, busy, safe job with a smile, contact with drug detail men, and a copy of Merck's Manual. He won't grow much, but he is accurate in office diagnosis and handles patients very well with his aggressive manner and knowledge of human relations. He will usually be popular and give medicine a good reputation. . . . The "scientist" may go into practice, where he does clinical research, but he more often works for medical schools, pharmaceutical companies, or community agencies. He must know HOW a case differs from others, WHY a drug works, but he lacks the ability to handle people. . . . The true "healer" derives something from both other types. He makes a clinical analysis, arranges for tests, and makes the diagnosis. He differs from his mechanical colleagues in that he understands medical science; he differs from the scientist in that he knows and likes people; he also has the ability to get people to do what is best for themselves. . . The mechanics may be increasing in number. The type of a student may be somewhat determined by noting his scientific curiosity, his optimism, his flexibility, his idealism, his horse sense, his integrtiy, his warmheartedness, says Dr. Warren.

Every now and then a diagnostic method is described which sends a chill down the spine of the average physician to whom an intravenous puncture is an adventure. Gwathmey ("the Younger," son of "Twilight Sleep" Gwathmey) has reported the INSERTION OF A NEEDLE INTO THE LEFT ATRIUM so that pressures may be obtained. (Medical Annals of the District of Columbia). . . . This is quite simple, except for the simultaneous insertion of a catheter into the thoracic aorta (or a needle into the bracheal artery), and except for the strange portal of entry — the lengthy needle is inserted through the back, at the eighth or ninth interspace, lateral to the vertebral body, through the mediastinal structures. . . . The fears of us non-adventurous people are somewhat justified by a gem of understatement which follows: "The complications of this procedure are usually not alarming and can be handled with ease. Hemothorax, pneumothorax, hemopericardium, mediastinal hematoma, hemoptysis, and pleuritic pain have been reported. There have been only 2 deaths recorded in over 400 cases."

Here is a medical quiz for you to try. Would you or would you not give ANTIBIOTICS to a patient going through major surgery in the hope of PREVENTING INFECTION? I would, but Kaplan, clinical professor of surgery at LSU says "Antibiotics should not be given to clean cases because they will often mask infection." . . . I think antibiotics make a "clean" case cleaner (and who knows how clean a case is?), and it makes a mildly contaminated case less likely to show an infection.

A. L. Blakeslee is a pretty good science writer, although we have lately had reason to be cautious about that kind of reporter. He reports, in a syndicated column, that an amazing new antibiotic may be at hand. 'MALUCIDIN' was discovered by Ivan Parfentjevo of Yale, and the source is a FERMENTED BREWER'S YEAST. It is a protein, and is said to be bacteriocidal or bacteriostatic for fungi as well as bacteria in animals. . . . The odd and additional angle is that yeast does not cause allergies, and the drug seems to desensitize animals which have been sensitized by proteins. . . . This could be, if confirmed, a platinum instead of a "silver bullet." It may be OK at Yale, but let's see what Harvard thinks of it.

H. P. Muller of Berkeley, Calif., is not only a well-known orthopedic surgeon, as well as head

PHYSICIAN of the recent U. S. OLYMPIC TEAM, but he is part of the "longest forward-pass" combination of Muller and Stevens (Brodie Stevens is a noted chest surgeon). . . . Apparently the trouble they had in Australia, and had to hide to avoid the appearance of alibis, was really something. Most of it came from the cold, windy, damp weather, with respiratory infection, arthritis, hay fever and asthma, etc., as a result. . . . Also, champs are not completely free from tension and worries. The British trainer said he used 95 per cent psychology and 5 per cent drugs, but the English doubtless thought Australian weather was nearly perfect.

"Oh doctor, what can I do for my BRITTLE NAILS?" Probably it might be wise to think of metabolism, and fungus infections, and possible esoteric methods of therapy, but the Knox Company has its own answer, — "The ONE way to help splitting nails which has been proved by published medical research is the tried and true Knox Gelatine!"

Here are some items on the use of ANTI-TB DRUGS which were gleaned at a Las Vegas meeting from Roger Mitchell of Denver. (Denver has again become a fairly hot clinical and laboratory research center in the past few years). 1. Isoniazid should be given in very large doses to most people. The blood level may be tested by a new biologic test. The dosage can be 15 to 20 mg. per kilo of body weight, or a total of 900 to 1600 mg. (compared with the usual total dose of 300 mg.). . . . 2. High doses of isoniazid may produce an acute neuritis. The neuritis can be prevented by 100 mg. per day of vitamin B 6 (pyridoxine), but it is hard to cure once it occurs. . . . 3. Pyridoxine is now available to druggists at 1.8 cents per 25 mg., whether your druggist knows it or not, and the cost per day should not exceed 10 to 12 cents. . . . 4. PAS (para-amino-salicylate) is very necessary in preventing bacterial resistance to isoniazid and streptomycin. It also prevents acetylation of isoniazid in the blood, or a deterioration of the effective, non-acetylated form of isoniazid. . . . The Denverites make this work sound good, and it should become fact (although it hasn't).

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TAX DEFERMENT FOR THE SELF-EMPLOYED
(Jenkins-Keough Legislation)

By L. D. Sprague, M.D.

PRESENT tax laws discriminate against 10 million self-employed taxpayers. High taxes and high living costs make it unduly difficult for the self-employed man or woman — you, yourself — to create an old age retirement program out of current income. At the same time, millions of our fellow citizens find that present income tax laws help them retire. By working for others, rather than for themselves, they participate in employee's pension plans. The internal revenue department deems moneys paid into these trusteed or insured plans by an employer as a business expense and as such constitutes a business deduction for him. Even greater benefit accrues to the employee since he does not have to pay any income tax on his company's contribution until the benefits are actually paid. This of course is usually after his days of high earned income are past and lower tax rates, if any, would then apply.

The American Medical Association has banded together with six other organizations to push passage of the Jenkins-Keough bill which would authorize physicians and other self-employed to defer income tax payments on earnings put into retirement or annuity programs. The tax would be payable when retirement benefits are received and the tax bracket is presumably lower. This organization is spearheaded by the American Bar Association and is called The American Thrift Assembly. The national chairman is F Joseph Donohue, a lawyer, of Washington, D. C. The Washington field office is located at 1025 Connecticut Ave., N. W., Room 612, Washington, D. C. Other organizations co-operating wholeheartedly, in addition to the AMA and ABA are: The American Dental Association, American Institute of Accountants, National Association of Retail Druggists, National Association of Real Estate Boards, and the American Retail Federation.

The fair tax principles embodied in the Jenkins-Keough bill have been before congress for more than a decade. Such legislation would promote long term savings, a fundamental factor in combating inflation which now constitutes a great threat to our economic stability and real

prosperity. Industrial growth is a sine qua non for the maintenance of prosperity. Financing of such growth can be done without inflation only if and when the supply of long term savings equals capital demands. For some time capital demands for factories, houses, roads and public facilities have been far greater than the amount of savings available for these purposes. Short term financing credit supplies an answer, but stimulates inflation. The present tight money market reflects the excess of capital demands over available long term savings. Such savings can be placed at the disposal of industry, trade and construction by institutional investors to meet the capital demands and thereby act as a real deterrent to inflation by assuring a steady and stable growth of capital. The greatest virtue of the Jenkins-Keough bill is that it represents one of the soundest means of encouraging long term savings.

The Jenkins-Keough bill (H.R. 9 and 10) allows a self-employed person to deduct from gross income each year a limited amount of self employment income contributed by him to a restricted retirement fund or paid as premiums to purchase an insurance policy with retirement features. He can deduct annually up to $5,000 or 10 per cent of self-employment income, whichever is less, but not more than a total of $100,000 during his lifetime. There's a five year carry-over of unused deductions, subject to certain limitations. An individual who has reached age 50 before the effective date, is allowed to deduct an additional amount, to help him build up an adequate interest in the fund or obtain more than a token annuity. In his case, the normal deduction limit is increased by one-tenth for each year of age over 50 and not over 70. The contributions, plus accumulations, become taxable when distributed, and may be withdrawn at any time. However, where withdrawals take place before age 60 the tax is 10 per cent greater than otherwise payable, but the payment is treated as having been received pro rata during the taxable year and the four preceding years. Lump sum payments after age 65 are given special treatment.

At present, government is discouraging self-employment and individual self-reliance by imposing heavy progressive income taxes (one of the basic principles of Marxism) and by failure to provide any practical provision by which the self-employed can save money for catastrophic periods and for old age. It is vital in a constitutional republic such as ours to have a large class of self employed, professional men, doctors, lawyers, dentists, architects, artists, artisans of all kinds and individual business men who work for themselves. It was this type of citizen who, in the early days, made this country great, who drafted our Constitution, conquered the wilderness and won the West. If we still want to develop this self-reliant type of man, we must provide him with a fair opportunity to succeed at his chosen work and not handicap him so by taxes that he chooses the status of an employee of others.

Jenkins-Keough legislation is embodied in H.R. 9 and 10 and at present writing is in the hands of the House Ways and Means Committee who reportedly are in favor of the bill. This bill should be reported out of committee so that it can be acted upon by the house and senate. Passage at this session or at latest in the next session, can be greatly enhanced by your own individual effort. Organizations, such as the American Thrift Assembly, can do much and will be actively pressing for enactment of the bill. In the last analysis, however, it is individual action that counts the most. Your own individual communications to the members of the House Ways and Means Committee and to your congressman and senators will provide the impetus for passage. You will be the recipient of the benefits of the bill primarily; all America would benefit from its provisions. Let's assert ourselves; let's support those who support themselves!

Chairman of the Ways and Means Committee is the Hon. Jere Cooper, address — House Office Building, Washington, D. C. Write to him asking that the Jenkins-Keough bill be reported out of committee and favorably supported. Send copies of your letter to Representatives John J. Rhodes and Stewart L. Udall and to Senators Barry Goldwater and Carl Hayden.

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MEDICAL WELFARE

Cost of Medical Care in the U. S.

WHEN THE various parts that go into the nation's health bill each year are added up, the total is staggering. Estimates of private and public spending include the cost of everything from patent medicine and toothpaste to surgeons' fees. Private care for the county in 1955 was placed at $11.2 billion, while public care (federal, state and local) was estimated at $3.9 billion. The following figures for private care costs are for 1955.

$3.4 billion for physicians' charges.

$3.7 billion for hospital charges.

$2.3 billion for charges for drugs and appliances.

$1.8 billion for other charges, including nursing, etc.

Health and Medical Resources

The medical "plant" that provides the country with the finest care of any nation is equally impressive when viewed statistically. In one area, that of medical school graduates, bare statistics fail to tell the whole story. They do not, for instance, reflect the increased utilization of physicians' skills and the advance of medical knowledge in treatment of patients.

225,579 physicians in U. S. in January 1956.

1,604,000 hospital beds in U. S. in 1955.

430,000 professional nurses in 1955.

300,000 practical nurses, attendants, nurses' aides in 1955.

4,735 medical school graduates in 1930.

5,275 medical school graduates in 1940.

6,135 medical school graduates in 1950.

6,845 medical school graduates in 1956.

Voluntary Health Insurance

Another development of great importance in the furnishing of medical care has been the growth of voluntary health insurance. Twenty years ago, the number of persons covered by some form of health insurance was only 1.5 million. When the drive was on for compulsory health insurance in 1949, just over 50 million persons were covered by voluntary insurance. Organized medicine contended then that voluntary coverage would expand, thus obviating the need for government insurance. The figures below prove this was a good estimate of the situation.

110 million persons now covered for hospital charges.

92 million persons now covered for physicians' charges for surgery.

55 million persons now covered for physicians' medical charges in hospitals.

10 million persons now covered for physicians' home and office call charges.

10 million persons now covered for major medical expenses (catastrophic) compared with 1.2 million covered in 1953.

Public Assistance

A part of the Social Security Act, but a separate administrative operation, the public assistance program also was enacted in 1935. Its basic purpose was to assist states in providing subsistence for destitute families. From the beginning, the states have contributed a portion of funds for the various categories of recipients. Federal appropriations 20 years ago were about $209 million annually. Now they have increased more than seven-fold, so that the appropriation for the current fiscal year approximates $1.5 billion. There are four programs: aged, blind, permanently and totally disabled, dependent children.

Until amendments last year, unspecified federal-state funds were paid out for medical services of the needy. An educated guess has been that between $90 and $100 million of federal money has been going into such medical payments. A more accurate estimate should be forthcoming as a result of the 1956 amendments. These amendments set up a new category of federal-state payments for medical care over and above the old subsistence payment limits, with medical payments going directly to the physician, hospital, druggist, clinic or nursing home.

5.1 million persons get monthly public assistance checks — medical costs included.

Under new law, direct medical payments are to be made in behalf of assistance recipients to physicians, nursing homes, hospitals, and for drugs. These direct payments will probably exceed $200 million and could reach $230 million by 1958.

Veterans

Another vast program with high demands on the federal budget is that for veterans' medical care. The policy of the federal government is that wartime veterans with service-incurred disabilities are entitled to the best medical and hospital care that can be provided. The Ameri-

can Medical Association supports this policy. Congress in June 1924, authorized VA to admit indigent non-service-connected veterans when there were spare beds. By 1957 roughly 75 per cent of all cases treated in VA hospitals were for injuries and diseases not originating during, or aggravated by, military service.

Now the problem is becoming more complicated as the veteran population grows older (World War I veteran in VA hospitals averages age 62) and becomes subject to chronic illnessess. Demands increase for use of VA facilities. Today VA requires: A full-time staff of over 4,600 physicians; 2,247 residents; 11,000 part-time consultants; and thousands of doctors on a contract basis for the agency's home-town care program.

22,599,000 total number of living veterans as of January 1957.

121,865 total number of VA hospital beds as of January 1957.

111,540 number of patients in VA hospital facilities on an average 1957 day.

$619,614,000 will be spent by VA for in-patient care in fiscal year 1957.

$82,638,000 will be spent for out-patient care in fiscal year 1957.

More than two out of three veterans treated in VA hospitals are treated for non-service-connected conditions.

THE DOCTOR'S SON IN MEDICINE

By Louis G. Jekel, M.D.

Phoenix, Arizona

SHOULD YOUR son become a physician? Should you urge him, or try to influence him, or force him to do so? What factors would help you decide? What questions must first be answered for you?

Does he qualify? What are the qualifications for success in medicine? Actually, general qualifications for success are much the same in all fields. I shall list, although not necessarily in the order of importance, the characteristics which I think qualify one to become a doctor.

Appearance. To be a doctor one need not be an Adonis. In fact it might be better not to be the matinee-idol type. Nevertheless, it is desirable to possess a normally shaped body and a physiognomy that at least is not repulsive. One should be rather normal.

Physical ability. In certain fields a doctor is called upon to exert a considerable output of physical energy. He need not be a champion athlete, but he must be able to cope with the strain of long and constant working hours and irregular and interrupted periods of rest. He must have stamina, and he should not be possessed of physical handicaps which would render him incapable of carrying out his duties.

Personality. Anyone in any field of endeavor may go further with a pleasing personality. Thus a doctor may be able to gain and hold his patient's confidence and control the diagnostic and therapeutic program better if his manner is pleasing. Call it "bedside manner" if you wish. Remember, however, that here I refer to an innate characteristic, not an acquired one, a trait which may be improved upon through conscious effort, but which nevertheless is a natural characteristic.

Native intelligence. This characteristic is concerned with the ability to learn. But it also has to do with that vague inborn trait of doing and saying the right thing at the right time. Again I am considering a characteristic which, although inborn, can be improved upon through individual effort.

Ambition and industry. The candidate for a medical degree is required to exert a tremendous mental effort. He must be ambitious and industrious and he must ever reach for that elusive goal at the end of the long row. Is he willing to make the necessary sacrifices? If so, he probably possesses the necessary ambition and industry to practice good medicine.

Honesty and integrity. This is perhaps the most important characteristic required of the physician. Honesty and integrity, above all, in the professional and financial dealings with his patients and his colleagues, and also intellectual honesty in dealing with scientific matters — these things are musts for the doctor. The traits of honesty and integrity will, if present, be apparent early in life. They must be apparent in a boy before one encourages him to become a physician.

The life-long training and environmental background of the physician's son may be a factor of importance. In his general up-bringing in a doctor's household, the physician's son naturally is thrown into contact with medical matters and the doctor's way of life, and he will have some

training in these matters. He will have some idea what it is like to be a doctor, a factor which probably would be an advantage to most young persons.

Other things being equal, then, is the son of a physician more likely to become a successful doctor than a boy from a non-medical family? The answer is probably yes, for the member of the doctor's family has had a life-long contact with the profession, knows from childhood what is expected of him, and knows what to expect from the profession. So it would be a matter of great experience, and in that manner alone could one expect the doctor's son to have a slight advantage over someone else – other things always remaining equal.

Would the medical profession stand to gain from having a doctor's son in its ranks? Would the profession stand to gain by having generation after generation of doctors' sons join it? Probably not – other things being equal. Any group may profit at times from an infusion of fresh blood. And if the profession can continue to attract good men, it will make little difference whether these men came from doctors' families.

Would there be advantages or disadvantages to society at large? Once again I believe the answer is no – other things being equal. Society and the profession need good men as doctors, and it makes little difference whether these men come from medical families.

Finally we come to the question: What would be the advantages or disadvantages to the individual?

The physician, in the course of his daily duties, may derive tremendous personal satisfaction from being a useful citizen and helping his fellow man. By being a useful citizen I do not mean that the physician must be the most "civic minded" person in town. He does not have to be the leading political figure, the mayor, or the congressman. He does not have to be an elder in the church. He does not have to be district governor of the service club organization. He may well be any or all of these, and he may do a fine job. But, by and large, he can do the most good, I am sure, by being a good doctor. And it is from his medical work that he can derive the greatest personal satisfaction.

Related to personal satisfaction is the esteem in which one is held by his fellow-man. The physician is usually a leading citizen – again because he is a physician and not because he has his finger in every civic pie. He has the opportunity to become, and usually is friend and benefactor to a large number of persons. These persons come to admire, and often revere him. Naturally, he derives a good feeling from this admiration.

The doctor may enjoy intellectual satisfaction. Medicine, being both an art and a science, presents untold opportunities for study in any of a number of different fields. The physician, by pursuing such studies can satisfy any degree of intellectual urge. The resulting compensation and gratification can be a source of great joy.

A physician has social advantages open to few other individuals. Let me hasten to say that I am not speaking of his opportunities to belong to the best country club. Rather, I am referring to the fact that he has access to almost any group. Because he is looked up to as an intelligent, honest, thoughtful person, he is considered to be an interesting person who makes good company. He is desirable. He can fit himself into almost any group. If he happens to choose the country club set, fine. But if his preference is for the church group or some other group, he will be made welcome. He can choose his social life to suit himself.

Finally, let us consider the financial reward that may be expected by our aspiring Aesculapiad. I deliberately place this point last because it is the least important consideration and should be so considered by the young man who plans to enter the field of medicine. Any good doctor (that is one who is reasonably intelligent and reasonably well-trained and who is reasonably industrious) can, anywhere in the United States, expect to have a substantial income, an income which will be somewhat greater than the average of his fellow American. Some doctors have large incomes; some do rather poorly. Any way you look at it, money-making is not the doctor's business; his job is to be a physician. Primarily he should be concerned with offering his patients good medical service. Secondarily, he should be concerned with providing for himself and his family. If he does a good job as a doctor, the money matter will take care of itself. If he wants to be a millionaire, he should enter some other field of endeavor.

So, in the end we come to this point: Two questions must be answered. Is the boy fit for the job? Is the job suitable for the boy? The boy

should understand what he faces and what is expected of him. He should also know what he may expect to receive in return for his efforts. He should be given all the help he needs to enable him to learn these things. But he should not be forced or coerced. He himself should make the final decision.

For what it is worth, I shall make this comment: I am not sorry that I chose medicine as my life's work.

NEUROLOGIC AND PSYCHIATRIC ASPECTS OF THE DISORDERS OF AGING, Vol. 35 edited by J. E. Moore, H. H. Merritt and R. J. Masselink. 307 pages. Illustrated. (1956) Williams & Wilkins. $8.50.

The "century of the child," as ours once was called, bids fair to become the century of the elderly, and we need all the information we can get from the young science of old age. The proceedings of the Association for Research in Nervous and Mental gives us the first book devoted entirely to the geriatric aspects of the central nervous system. You can be sure the association has brought together the most seasoned workers in a wide field, in providing excellent original and review articles. Refreshing in every sense, this one is for specialists and nonspecialists alike.

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Organization PAGE

CIVICS

By Norman A. Ross, M.D.

U. S. PUBLIC HEALTH SERVICE COMMUNICABLE DISEASE CENTER FOR ARIZONA

IT WAS our hope that final decisions, even signing of the contracts, would be completed prior to submitting this page. However, though plans, drawings, and specifications are in process, this is not the case.

The public health service responsibilities and activities among the Southwest's reservation Indians, as well as other studies (note the recent coccidioidomycosis conference in Phoenix) have caused this governmental agency to recognize the need of a communicable disease center in either New Mexico or Arizona.

The most that can be said now is that there is a possible date for public announcement prior to the end of the fiscal year which is July 1, and Arizona is very much in the picture.

* * *

From the American Medical Association News Letter

Federal Medical Welfare Picture: The special report under date of March 7, 1957, attempts to do three things about this. First, it collects in one document and from original sources the most important statistics involved in a federal medical welfare program; second, it relates data to specific programs and describes the purpose of the program. Third, it presents statistics in an easy-to-use form. We have studied this letter intensely. We can attest to the above which is taken nearly verbatim from the introductory letter to this report.

Statistics, such as 571 measures introduced related to health legislation in 1955 and 1956 in the 84th congress, are impressive. The fact that most of these, of course, did not get past committees indicates the scrutiny to which these measures are subjected by our congress in protecting the health and welfare of the public.

The Medical Dependents Act, voted last year, completes the present federal medical aid picture, which provides at least some degree of medical care at low cost from the federal government to one out of every four persons as follows:

22,599,000 living veterans as of January 1, 1957.

5.2 million military personnel and their dependents.

300,000 beneficiaries of the public health service, including 200,000 seamen, but excluding beneficiaries of Federal Employees' Compensation Act, and Indians.

5.1 million Indians and Alaskan natives receiving care in 56 federal hospitals or in private facilities under contract.

4 million beneficiaries of the Federal Bureau of Employees' Compensation Act (at-work injuries only).

Our present federal medical program is not limited to persons within the United States as evidenced by the following:

Foreign economic aid programs (entirely U. S.) and the World Health Organization (U. S. largest contributor) give limited health care in 92 foreign countries. Example: 25.3 million children were vaccinated in 1956.

The immediate future expansion, now in the mill:

A proposed program for federal employees and their dependents would add an additional 7 million.

THE MARCH 29 MEDICAL ASSOCIATION NEWS LETTER CONTAINS THE FOLLOWING STATEMENT:

Surgeon General Burney has appointed a committee of seven physicians to advise him on U. S. Public Health Service activities related to the practice of medicine. In making the announcement Dr. Burney said:

"We have many groups advising us on research and disease control. With growth of medical and related research, it is increasingly important that we work with private physicians

as well as health agencies to help apply the new knowledge promptly and effectively. Our new committee will be of great aid in this and in advising on activities of PHS which bear directly or indirectly on the practice of medicine. We are very grateful to have the advice of this distinguished group of physicians."

The membership of this group is impressive, but we would doubt that this will mean curtailing of federal medical activities.

The April 12 letter announces that the administration offers its aid to medical school bills.

The April 26 letter presents the differences in the administration's aid to medical school proposals as that compares to a bill, S. 1922, which has been introduced by Democratic Senators Hill, Neely, Humphrey and Smathers. The differences are as follows:

1. The administration bill would amend the present three-year, $30 million a year program for research construction grants by increasing it to a total of $225 million to be used over the next four years, and for grants to help build teaching as well as research facilities. The Democrats would leave intact the present research grants program of $30 million a year for three years, and in addition would provide $60 million a year for five years for teaching facilities, or a total of $390 million.

2. Under the administration bill, the U. S. contribution could not exceed 50 per cent of the research or teaching project cost. The Democrats also call for 50-50 matching, except that the U. S. would increase its share to two-thirds under two conditions: (a) if the school gives assurances that its freshman class would be increased by 5 per cent, and (b) in the case of new schools.

3. The administration bill would expand the present research advisory committee and make it responsible for screening teaching as well as research construction projects, whereas the Democrats would set up a new 12-man committee, with half its members from the medical or dental professions.

In view of the one-to-four ratio of federal medical care, we suggest that the following be read and compared with local hospital and medical association health insurance programs:

THE APRIL 26 LETTER:

AHA PLAN FOR U. S. EMPLOYEE HEALTH INSURANCE INTRODUCED:

Introduced by Rep. Chet Holifield (D. Calif.), the American Hospital Association's bill for health insurance for federal employees now is before the House Post Office and Civil Service Committee. It is H.R. 7034. The bill would offer U. S. civilian employees both basic and major medical coverage, with U. S. paying part of the cost. Payroll deductions, which so far have not been approved by the White House, are provided. About 2 million employees and an equal number of their dependents would be affected. Major provisions of the bill:

1. The civil service commission would negotiate two types of basic contracts for nationwide use, one offering service benefits for doctors'-in-hospital charges and hospitalization, and the other offering indemnity benefits. In the indemnity contract, hospital payments would have to be sufficient to meet the cost of hospital care.

2. Employees would have a choice of service or indemnity basic coverage, or federal employee association or group practice arrangements.

3. Major medical or catastrophic coverage would be available.

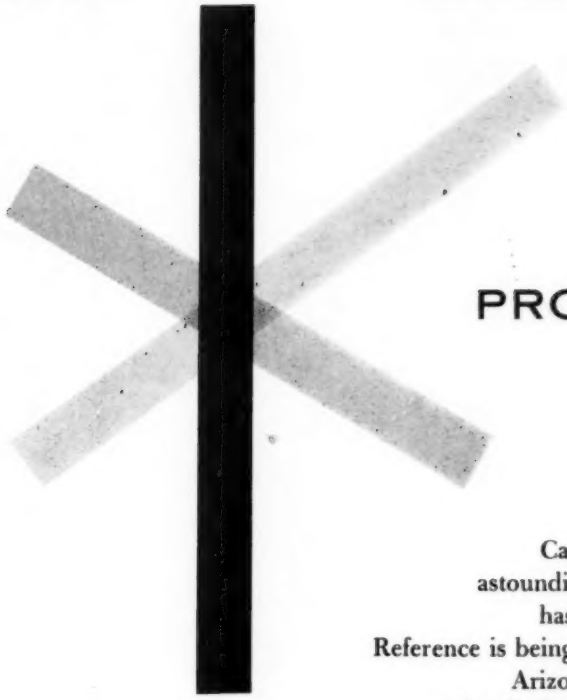
4. The U. S. would match employee payments up to a maximum of $2.17 for employee only, and $5.42 for employee and family. Thus if the cost of basic insurance for a family came to less than $10.94 per month, the balance of the U. S. contribution could be applied as matching money to help pay the cost of major medical coverage. It is estimated the U. S. would pay about 40 per cent of the total health insurance costs for employees taking out both basic and major medical policies.

It is expected the post office and civil service committee will defer hearings at least until the administration's bill has been introduced.

* * *

From time to time we quote from, and comment on, American Medical Association's Washington News Letter, the distribution of which, we have been informed, is quite limited. Our purpose in doing so is to not only call your attention to matters presented, but to stimulate interest. We have been informed that requests for individual letters can be addressed to:

The American Medical Association
Washington Office,
1523 L Street, N.W.
Washington 5, D.C.



diagnosed as 'fabulous',

PROGNOSIS:

MORE SO!

Careful examination of the subject reveals astounding growth patterns. The development has been phenomenal.

Reference is being made—of course—to amazing Arizona, the 'Baby' State which is growing so fast it obsolesces last year's progress chart.

As busy as you've been, doctor, you've no doubt observed the startling economic behavior of this rapidly maturing youth.

But perhaps you've been too busy to take advantage of the daily investment opportunities this unusual growth creates.

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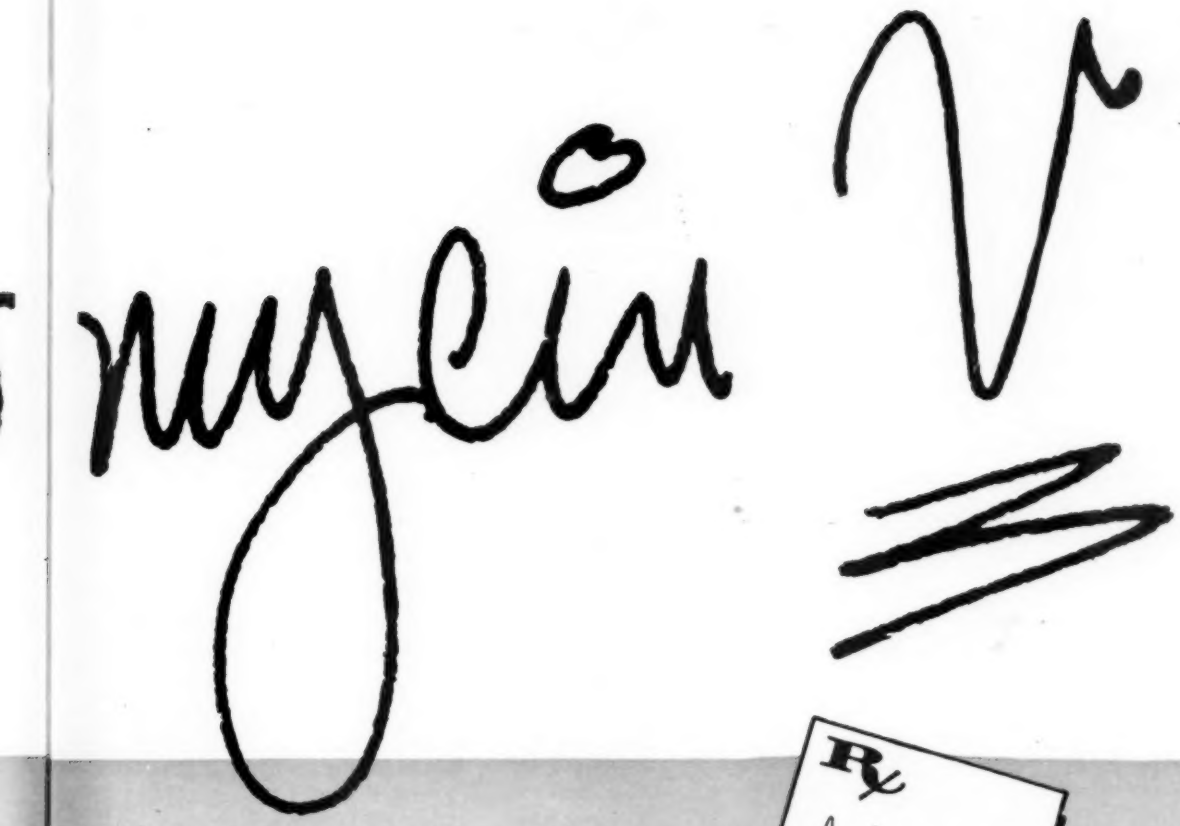

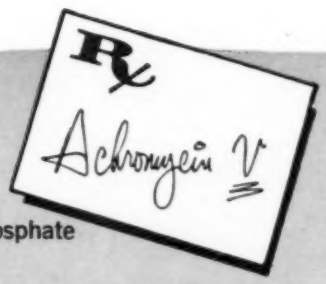

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CAPSULES—Each capsule (pink) contains tetracycline equivalent to 250 mg. of tetracycline HCl, phosphate-buffered. Bottles of 16 and 100 capsules.

SYRUP—Each teaspoonful (5 cc.) of orange-flavored syrup contains 125 mg. of tetracycline HCl activity, phosphate-buffered. Bottles of 2 and 16 fl. oz.

ACHROMYCIN V dosage: 6-7 mg. per lb. of body weight per day for children and adults.

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AUTOMOTIVE CRASH INJURY RESEARCH

FOR THE past two years, a study of injury-producing automobile accidents has been conducted in various selected sampling areas in Arizona. The study is unusual in that it is primarily concerned with determining the specific causes of injury to occupants of passenger cars involved in accidents. Prior to the inception of the Automotive Crash Injury Research program, only the causes of accidents were investigated and reported; causes of injury were ignored.

The Arizona program constitutes a co-ordinated effort on the part of the Arizona Medical Association, the Arizona Highway Patrol and the Arizona Department of Health, in co-operation with the Department of Public Health and Preventive Medicine, Cornell University Medical College, New York.

Last year, over 40,000 persons were killed and over 1,350,000 injured, more than 100,000 permanently, in automobile accidents; approximately 75 per cent were occupants of passenger cars. If the present trend continues, the National Safety Council estimates that in 1966 there will be 53,000 deaths involving 83 million cars, and a corresponding increase in injuries.

While the Automotive Crash Injury Research program favors every realistic measure directed toward the prevention of accidents, and there is still much to be done in this field, it recognizes at the same time that, as long as human nature remains a factor in the accident equation, the occurrence of accidents can be controlled but not eliminated. Education, for instance, can do much in cautioning a driver to abandon the wheel when his reactions are inhibited by fatigue, but, in the final analysis, the decision, when left to the individual, may well lead to imprudent judgment and result in a serious accident, often exposing other more prudent drivers and innocent passengers to injury and death. Improved engineering of highways with controlled access and well divided opposing traffic lanes reduce the chances of many types of accidents, such as the two car head-on collision, yet accident records of the best super highways in the country would seem to indicate that, as long as human nature remains unchanged, many accidents will continue to be caused by carelessness, inexperience, emotional instability, drunkenness and fatigue.

Automotive Crash Injury Research, however, has demonstrated that the inevitable accidents can be productive of fewer crippling and fatal injuries. To this end, highway accidents are analyzed with a view to learning how to build more safety factors in automobiles.

The study of injury causes in automobile accidents, from its inception, confirmed suspicion that many persons are being killed unnecessarily. As might be expected, the body area most frequently injured is the head – 71 per cent of injured persons sustain an injury in this area. In the study of human tolerance to force, it was observed that common structures, such as certain aircraft instrument panels constructed of light gauge metal which would deform under impact, absorbing much of the energy, could be struck by the head at impact velocities of 40-50 miles per hour without causing skull fracture, loss of consciousness or subsequent evidences of concussion. The distribution of force in time and area and the physical principles of pressure compensation provide these astonishing examples of protection.

Participation by Arizona medical and police groups, combined with participation by similar groups in other states, has made available data which has formed a basis for the development of engineering improvements which are specifically designed to reduce or moderate injury if an accident occurs. In addition, data produced by the interstate program promises to implement medical treatment of auto crash victims through more definite knowledge of the nature and scope of the problem. The trauma committee of the American College of Surgeons has expressed great enthusiasm in this project.

On June 1, the study was conducted on rural highways state-wide, but was limited to 1956, 1957 and 1958 passenger cars.

Physicians and hospitals were asked to cooperate in this vital approach to the national problem of automobile fatilities and injuries. The continued study will help to evaluate the effectiveness of safety design changes in late model cars, such as improved door-holding mechanisms, energy-absorbing steering wheels, seat belts and interior padding. Studies of post-1955 automobiles involved in accidents already indicate, for example, that occupants of these cars are experiencing a 29 per cent reduction in the risk of dangerous through fatal grade in-

jury. A preliminary evaluation of improved door locks designed to decrease the incidence of ejection (commonest cause of injury in accidents) shows that, in the injury-producing accidents studied, post-1955 models experienced approximately 27 per cent less incidence of front doors opening during accidents than did pre-1956 models. A direct result was an approximate 50 per cent cut in the frequency of occupant ejection.

Occupants of these newer model automobiles have been found to sustain nearly 30 per cent less dangerous to fatal grades of injury. Such decrease is attributable, in large measure, to the fact that doors remained closed, but also, in part, to design improvements in the interior of many new cars.

It has also been demonstrated that properly engineered and installed seat belts can provide a remarkable degree of protection. The most marked improvement was seen in the prevention of ejection and its associated injury risks. Although continuing studies are expected to increase the knowledge of the precise degree of added protection a seat belt may be expected to afford, present findings show that their use can reduce injury rates somewhere within a range between 30 and 60 per cent (depending on the type of accidents and other factors).

Medical and accident data-collecting methods operate in the following way: All 1956, 1957 and 1958 passenger cars involved in accidents occurring within the state, but outside the limits of municipalities, come within the scope of the study. Immediately following the accident, the Arizona Highway Patrol officer in charge submits to the physician or emergency room chief or coroner a special medical report form furnished by Cornell. These brief forms are designed to include a description of the extent and nature of all injuries. Completed forms are mailed to the Arizona Department of Health. Here, medical reports are matched with information supplied by the investigating highway patrolman concerning specific causes of the injury, as well as accident and car damage details and special photographs thereof. Completed cases are then forwarded to Cornell University Medical College for analysis and statistical use.

These studies are sponsored by the Armed Forces Epidemiological Board through its Commission on Accidental Trauma, with funds supplied by the Surgeon General of the Army, by the Division of Research Grants of the United States Public Health Service and by grants of unrestricted funds by the Ford Motor Company and the Chrysler Corporation.

VETERANS' ADMINISTRATION PRIVATE PRACTICE?*

NUMEROUS examples can be documented of veterans' administration hospitals admitting and treating non-indigent patients for conditions having no possible connection with service in the armed forces.

The writer recalls several cases of hernia, incurred under coverage of the Workmen's Compensation Act of Texas, wherein the employee received a lump sum settlement including surgical fee, hospitalization expense and compensation for the convalescent period at the maximum weekly rate. When re-examined some six weeks later for return to duty, and found to have a good and strong repair, such cases readily volunteer the information that the surgery was done at the local VA hospital. And when asked how they were eligible for VA treatment, since they claimed their disability to be due to recent industrial employment, and had been paid for by private industry, the answer is almost invariably a surprised-that-you-ask, "I am a veteran."

The surgery is nearly always good, since it is often done by some of our well-trained colleagues who do private practice in honest competition, and on the side do part-time two afternoons or days per week of staff work at the local VA hospital for fees of $25 to $50 per afternoon or day. It is possible these private practicing, part time VA colleagues don't do all of this surgery, but it is reasonably certain that VA authorities will not rush in to prove that much of it is being done by residents in training. It has been a long haul for the VA to sell the veterans on the fact that they are getting the best surgical, medical and dental care and the best social and other care.

Now comes an incident of such concern to all practicing physicians. And the principle involved is of importance to every citizen of any occupation whatever.

A VA hospital in Texas has presented a bill of $1,569 to a small industry's insurance carrier for services to an employee injured on duty

*Reprinted from the Houston, Texas Medical Record and Annals, March 1955.

in the small industry. The bill states it is for the first 54 days' stay, and among the itemized parts are:

1. Anesthesia, $40.

2. Operation, removal of herniated nucleus pulposus bilaterally without laminectomy; spinal fusion, L5 to sacrum, $562.50.

3. Board and room to date, 54 days at $14.75 per day, $796.50.

In an accompanying letter and interim summary, the VA hospital registrar shows full knowledge of the fact the veteran is not indigent, his condition is not service connected, but is a responsibility of an insurance carrier under the Workmen's Compensation Act of Texas, and knowledge that the insurance carrier has already initiated treatment at the hands of private physicians of its choice.

The patient had strained his back in the course of his employment in a small city and had gone to a chiropractor for treatment. Upon being given notice of injury, the carrier had the man removed to a larger city and placed under the care of a qualified orthopedic surgeon. The surgeon admitted the patient to a private hospital and began conservative treatment of traction in bed after routine x-rays, physical examination, etc. He also had consultation with a qualified neurosurgeon who noted the low back complaint, with pain in one buttock and thigh posterolaterally, but with no change from the normal in reflexes and no paresthesia. The neurosurgeon concurred in the continuing of conservative treatment.

After 10 to 14 days in the hospital, the patient was allowed to go home, and was returned for treatment two weeks later. Readmission to the hospital was advised, but the patient refused. He wrote shortly thereafter that he was improving, but the next time he was heard from was after he was accepted in the VA hospital where after a four week period of conservative treatment, he was operated upon.

The VA hospital advised it has placed a lien on "any benefits that are due this veteran to pay the cost of his hospitalization here," and had its "chief attorney" file its claim with the industrial accident board.

From a study of this record, several conclusions must be drawn:

1. The so-called pauper's oath for veterans presenting themselves for treatment of non-service connected disabilities is knowingly disregarded by some VA hospitals.

2. The federal government, through its VA hospitals, is practicing medicine and surgery on individual, private, non-indigent patients, and is charging fees out of proportion (in their total) to what is ordinarily charged for similar services to a person covered by the Workmen's Compensation Act of Texas.

3. In listing the surgeon's and the anesthesiologist's fees, $562.50 and $40 respectively, the federal agency is either exploiting its full-time or part-time surgeons, or is paying them huge sums, while the taxpayer is paying for the operation of the hospital. Industry, through its insurance payments and taxes is, therefore, paying twice for one service.

4. In not communicating with the fully capable orthopedist and neurosurgeon who had begun treatment of the patient and in no way had relinquished his care, the VA showed poor professional practice, and the following borders on the unethical: A part of the VA history, published to the carrier and to be a part of the record before the industrial accident board, contained the derogatory phrases, "His treatment consisted of skin traction – and numerous pills of various sizes and shapes," and "became dissatisfied with his private physician and released himself from their care."

5. The federal government, through its VA authorities, is showing a total disregard for a ruling of the Industrial Accident Board of Texas in treating without authorization a case for which the carriers had already obligated themselves to furnish treatment through capable surgeons of their choice and in a private hospital.

Is it not time for county medical societies to take action along the only lines that can stop this well-advanced phase of federal practice of medicine? We, as local society members, aided whole-heartedly in the early phases of the present VA program when, just after the war, the great majority of patients had genuine service-connected disabilities, and we, as veterans, felt it our duty to help.

We should now fight just as energetically a bureaucratic system that is actually using some of our private practicing members and our medical school deans in a way that will surely destroy the private practice of medicine if not stopped cold. AMA has already gone on record as opposing these abuses, but can do

little on a national level. It has been belittled as a non-representative bunch of "brass hat" doctors in Chicago and Washington, out of touch with patients' problems. An honorable member of congress recently told us the above was his evaluation of AMA. Are Dr. F. J. L. Blassingame, a trustee, and Dr. John Glen, a delegate to AMA, out of touch with patients? They are, to me, speaking for me in AMA policy-making and execution. After all, individual practicing physicians in component county societies are the AMA.

The measures here proposed will no doubt result in a vicious attack on us locally, with all the influences a federal agency can muster, but we may find unexpected support if we make our position clear and stand our ground. The Houston Chronicle some years ago actually began this battle for us with front page headlines on VA hospital abuses, but we did not follow through. Some action along the following lines is imperative:

1. Request a complete and public census on all cases admitted to our local VA hospital during 1954, with a special reference to service-connected disability and ability to pay for private hospitalization; the cases to be listed by number so as to avoid embarrassment to many.

2. Offer to furnish the personnel for such a survey at the society's expense, if expense of the survey is offered as an excuse.

3. Request our members who are primarily engaged in private practice to sever their connection with VA as soon as legally possible.

4. Request the Houston Dental Society to do likewise.

5. Request our members who are primarily engaged in private practice to discontinue any and all participation in the residency training program of the VA hospitals until all abuses are corrected.

6. Reassert ourselves in the operation of our own city-county hospital for indigents, so that the ancillary services will be the best possible, whether the patients be ex-service men, ex-shipyard workers, or whatever, so long as they need free care.

7. Urge our industrial accident board to continue to disallow VA hospital bills, on the basis of its written letter to our society recently wherein it stated unauthorized medical or surgical expense of a case under its jurisdiction would not be allowed.

8. Urge insurance carriers, group hospitalization companies, etc., to rewrite their policies so as to exclude payment for VA hospitalization expense.

It is later than we think. "Creeping" is not the word for what is happening here. It is more fitting to use the description of our congressman, who said he was glad to see a group of doctors looking so good (at a luncheon). He wanted to remember what we looked like before the freight train (federal medicine) ran over us.

I think the congressman's freight train can be stopped, but only with concerted local action; not by letting George (AMA) do it.

W. H. Hamrick, M.D.

PROGRAMS OF THE ARIZONA STATE DEPARTMENT OF HEALTH

The following article is presented to Arizona's physicians in order that they may know these several points in health education for public health workers of the state.

There will be noted that the physician and the hospital are essential to the preventive health efforts indicated. The individual physician may also find herein items for use in the education of parents, whether patients or adult groups.

THE CHILD DEVELOPMENT CENTER

By Clarence G. Salsbury, M.D.
Arizona Commissioner of Public Health

THE family physician can use help many times in making a diagnosis of mental retardation. He may need help in giving help to the parents of a child suspected of being mentally retarded. Too often the parents are unable to afford the consultant prices of the psychiatric social worker, the psychologist, and the psychiatrist. The emotional reaction of the parents may make it too difficult for them to carry the many referrals to a suitable conclusion. Getting all these consultants together to discuss the findings of each professional worker is difficult.

The need for the team approach to the diagnosis of mental retardation has motivated the State Department of Health to establish a facility and staff to demonstrate this professional service. The program lies within the field of mental health. It has been more realistic, however, to consider the child in his entirety. A pediatrician has been chosen therefore to give professional services to the patient as well as clinical direction to the program.

Upon the pediatrician rests the total judgment in regard to clinical, x-ray, and laboratory services needed. Upon him rests the final judgment in regard to the consultation services needed. His decisions will be guided in part by the findings and opinions of the members of the team who are dealing with the social studies, the psychometrics, the technics in training, and with the follow-up services in the home.

Three important areas of special studies for some of the mentally retarded children will be vision, hearing, and speech. A child may truly be retarded by reason of defect in these areas. The retardation in such instances need not be mental in etiology. There are therefore provisions for ophthalmologic and otolaryngeal medical consultation. Special studies by a audiologist or a speech therapist may be indicated in order to determine methods essential to the teaching of the mentally retarded child.

There is orthopedic consultation provided if the clinical director of the project needs this diagnostic assistance. There are neurologic and psychiatric consultation services provided. It has been hoped that a psychiatrist may eventually be established as a part-time professional worker on the staff of the Child Development Center*

The psychiatric social worker and the psychologist employed to serve on the diagnostic team provide valuable information to assist the clinical director. These health workers provide numerous bases for measuring the progress of the mentally retarded child and the ability of the family and the community to comprehend the needs and capabilities of the mentally retarded individual.

A specialist in the field of training technics is a staff member at the Center. It may take a few daily sessions with the child to enable this specialist to reach a decision in regard to the best methods to train and educate him. It may take many such sessions to ascertain the methods which can best be used by the family and by the agencies responsible for the training and education of the child.

There is a public health nurse on the staff of this project. She assists the pediatrician at the time he is examining the child. This health worker is helpful to the parents of the child and to the public health nurse from the local health department assigned to follow-up services in the home. There is need for interpreting the recommendations of the diagnostic team. There is need for understanding the actions and achievements of the child as a part of evaluation of parent and teacher actions and achievements in dealing with him.

The clerk receptionist and stenographers, key persons on this staff, have been assigned the same responsibilities of clerk receptionist and stenographers in every professional service. These workers maintain the optimum in public relations and see that all the little idiosyncrasies of the professional workers are respected and that reports and communications are where and as they should be.

*In addition to these consultants noted, there are provided consultants in the fields of psychology, nutrition, and special education.

REPOSITORY FOR MEDICAL CERTIFICATES

BECAUSE of the tragic losses of educational records and official credentials of physicians resulting from wars and natural disasters in the past, the 10th General Assembly of W.M.A. adopted a recommendation of its council, approving establishment of a central repository for medical records.

This action followed an extended study and consultation with other international organizations, none of which proposed to develop such a project themselves. All agreed it was urgently desirable and pledged their support and co-operation to W.M.A. in developing the plan.

The national medical association in each country is to act as the "receiving agent" for the records of the doctors in that country, to verify such records, and to forward them to the W.M.A. secretariat for deposit. The types of credentials to be legally recognized and eligible for deposit have been established, as well as a system of identification. A repository has been selected. Identification forms and detailed information will be furnished individual physicians through their national medical societies and their component units in the near future.

The central repository project has been developed in accordance with one of W.M.A.'s chief objectives: "To protect the interests of the medical profession." The success of the enterprise will depend on the co-operation of the national medical associations, and ultimately on the participation of the individual doctor whose vital interests this undertaking is intended to protect.

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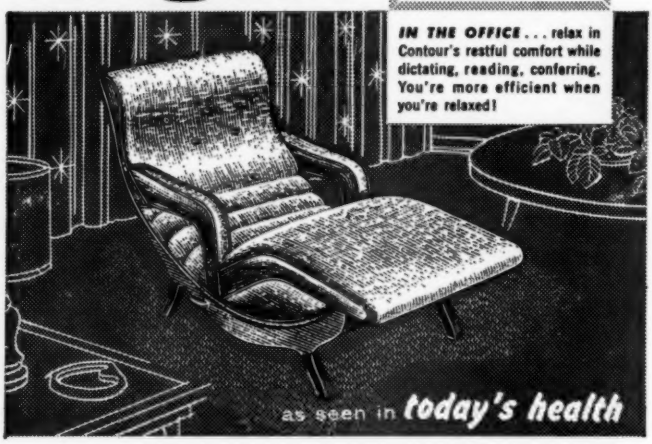

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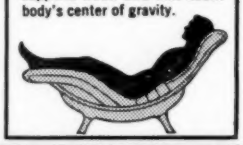

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SAFETY OF STORED LIQUID PLASMA: A CLINICAL STUDY*

By Paul I. Hoxworth, M.D., Ph.D.,
Walter E. Haesler, Jr., M.T. (A.S.C.P.) B.B.

CLINICAL use of pooled plasma in the treatment of various forms of shock and gastrointestinal diseases has been discarded by most physicians, chiefly because of the high incidence of hepatitis in recipients. Solution of the plasma-hepatitis problem by a method easy to use in blood banks might assist in more general use in clinical medicine.

The plasma pools were prepared from about 72 donors, cultured, and dispensed to final containers by sterile aseptic techniques, and the plasma units were allowed to stand at room temperature for at least six months before release for use.

The survey for incidence of hepatitis began in January 1953, consisting of a follow-up by letter to each recipient and subsequent visit by a graduate nurse to confirm the data reported and to try to locate those not replying to the letter. The data was tabulated and recipients divided into: Group 1, who received plasma and whole blood; and Group II, who received plasma only. As a further check, hospital records of all patients in the Cincinnati area with a discharge diagnosis of hepatitis since July 1952 were examined (infectious hepatitis was included), together with all cases reported to the health department, and these lists compared against the complete list of plasma recipients.

The results in the two groups of cases were as follows:

Group I – Incidence of hepatitis in recipients of plasma and whole blood:

		Donor Exposure	
		Plasma	Whole blood
Recipients	815	3773	2885
Expired	284		
Believed living	531		
Followed	370	3694	1310
		4 cases of hepatitis	

Group II – Incidence of hepatitis in recipients of plasma only:

		Donor Exposure	
		Plasma	Whole blood
Recipients	292	3388	0
Expired	95		
Believed living	197		
Followed	164	3290	0
		No cases of hepatitis	

In summary, it was pointed out that Group I recipients showed the incidence of hepatitis to be expected from their exposure to whole blood; while Group II recipients were exposed to 81 per cent of the total plasma donor population with no cases of hepatitis. In addition, plasma from the pools used in the Group I cases contracting hepatitis were given to 45 other patients, 30 of whom could be followed. None developed hepatitis. The infectivity of untreated units of plasma varies from about 7 to 22 per cent in pools from 50 or more donors.

Thus, this study, for the first time, offers statistically conclusive evidence that storage of plasma for six months or more at room temperatures has eliminated the activity of the hepatitis virus.

*Trans. Am. Surg. Assoc. 74:48-60 (Sept.) 1956.

LOCATION OPPORTUNITIES

ASHFORK – Pop. 700 – North centrally located – Railroad center – Contact the Women's Club, Ashfork, Arizona.

BENSON – Excellent opportunity for GP – This David-Benson trade area has about 5,000 population with only one doctor available. Contact Mrs. Thomas Allen, Secretary, Benson Business Association, Benson, Arizona.

CAMP VERDE – Located in the heart of a large farming and ranching area on the Verde River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R.N., Camp Verde, Arizona.

FLAGSTAFF – Pop. 17,500 – Largest city in the north central Arizona trading area. One pediatrician is needed (as there are a number of general practitioners who would gladly refer work to him). Excellent opportunity for an eye, ear, nose, and throat doctor. Contact C. Herbert Fredell, M.D., Secretary, Coconino County Medical Society.

GILA BEND – Pop. 2,500 – 80 miles west of Phoenix – Nearest town to the Painted Rock Dam Project – Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. $150 monthly

income from board of supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Arizona.

LAS CRUCES, N. M. – In south central part of state and not too distant from El Paso, Texas. Population is approximately 22,000; boasts state college and White Sands proving grounds. General hospital, 85 beds, fully accredited and staffed by 14 doctors. Need urologist, anesthesiologist, and obstetrician-gynecologist. For full details write: A. M. Babey, M.D., President of the Staff, 250 West Court Street, Las Cruces, N. M.

MORENCI – Mining community located near New Mexico-Arizona border – Pop. 10,000. Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Arizona.

PAYSON – Pop. 1,800 – Have completed and equipped a new clinic. Are badly in need of a medical doctor; closest medical facilities are 80 miles away. For further information contact Mr. Walter Surrett, President, Payson Clinic, Payson, Arizona.

TUCSON – The VA Hospital has two vacancies at the present time – one is for an internist on the medical service and the other is for either a general or thoracic surgeon on the surgical service. State license is necessary, but not necessarily an Arizona license. Contact S. Netzer, M.D., Director, Professional Service, VA Hospital, Tucson, Arizona.

YOUNGSTOWN – Pop. 130 – Located 16 miles from Phoenix, four miles from Peoria, one and a half miles from El Mirage, one mile from Surprise, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Arizona.

YUMA – Pop. 15,000 – Situated in the southwest corner of the state on the Colorado River – Semi-retired medical doctor, possibly a GP, may work part time or full time. He may do his own surgical procedures or may call upon local surgeons to do surgical procedures. If he would wish, he may be director of the Yuma County Health Unit which is an administrative position. Now paying $6,600 annually for a permanent, part time physician. However, it could be revised upward considerably if he would handle his own surgery and the health unit. If interested, contact Mr. R. L. Odom, P. O. Box 1112, Yuma, Arizona.

For information on opportunities in the field of industrial medicine, contact:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Arizona.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona.

Ira E. Harris, M.D., Miami-Inspiration Hospital, Miami, Arizona.

Charles B. Huestis, M.D., Box 928, Hayden, Arizona.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona.

John Edmonds, M.D., Kennicott Copper Corporation Hospital, Ray, Arizona.

LOCATION INQUIRIES RECEIVED DURING MARCH AND APRIL 1957

CYR, GERALD ARTHUR, M.D., Route 151, Greenland, N. H., GP wishes to locate in county or state governmental institution. Available now.

DUSKAS, JAMES J., M.D., 1110 Oakmont Avenue, Erie, Pa., GS, desires assistant or associate practice. Available now.

HELFMAN, RICHARD J., M.D., 48 St. Paul's Place, Brooklyn 26, N. Y., GP, 1956 graduate of Chicago Medical School. Desires general practice. Available 1959-1960.

JOSEPH, ROBERT H., M.D., 68 Kinley Drive, Las Vegas, Nev., GP, presently serving in the U. S. Air Force. Desires clinic, assistant or associate practice. Available July 1957.

LARSON, LEWIS WILLIAM, M.D., 130 South Wheeler Street, St. Paul 5, Minn., I. Desires clinic or associate practice. Available now.

LAYON, A., M.D., St. Luke's Hospital, Fargo, N. D., ObG. Completing residency in obstetrics-gynecology. Interested in clinic, assistant, or associate practice. Available July 1, 1957.

MILES, MARILYN, M.D., Kemmerer Building, Norton, Va., Pd. 1950 graduate of Albany Medical College. Available now.

NELSON, WILLIAM J., M.D., 1315 Fourth Street, Coronado, Calif., GP. 1953 graduate of University of Texas. Presently in military service. Prefers general, assistant or associate practice. Available November 1957.

ROBERTSON, LEO EUGENE, M.D., 26743 Eldridge Avenue, Oakland, Calif., GS. 1950 graduate of University of Utah College of Medicine. Presently in U. S. Navy. Prefers clinic, as-

sistant, associate or industrial practice. Available July 1, 1957.

STRICKLAND, CHARLES E., JR., M.D., 2923 Wylie Drive, Dallas 35, Tex., Path. 1951 graduate Southwestern Medical School. Currently resident physician in pathology. Available July 1, 1957.

TAVENNER, MICHAEL C., M.D., 607 Medical Arts Building, Norfolk 10, Va., Pr. Prefers clinic, assistant or associate practice. Available now.

THOMPSON, ARTHUR F., M.D., 509 West Arlight Street, Monterey Park, Calif., ObG. 1951 graduate of Stanford Medical School. Prefers small clinic, assistant or associate practice. Available January 1, 1958.

WARNER, J. ROBERT, M.D., 615 A.C. and W. Squadron APO 132, New York, N. Y., GP. 1953 graduate Georgetown University School of Medicine. Currently completing two years service in U. S. Air Force. Prefers general, associate with one or two physicians. Available September 1, 1957.

AMERICAN CANCER SOCIETY

THE AMERICAN Cancer Society announces the award of $4,636,651 for research to 243 scientists in 108 universities and medical centers in 35 states — an all-time record for the society. The grants were made from 408 applications for a total of $12,507,613.

This is in addition to a total of $3,000,350 in grants to 46 research centers already awarded during the current fiscal year. In all, the society is this year devoting $7,637,001 to cancer research.

These record-shattering awards were made possible by the success of the society's annual crusade in 1956. The 1957 campaign, well ahead of last year's, indicates that still greater funds will be made available for research during the 1958-59 fiscal year.

The 243 projects and fellowship grants were voted by the executive committee of the society's board of directors. They are the first to be approved under a new granting system in which committees of scientists and a research advisory council serve the society directly. Grants are now being made three times a year, instead of once as in the past.

"In the 44 years of its existence," Mefford R. Runyon, the society's executive vice president said, "the society has seen four distinct psychological eras.

"The first was one of little public interest or support. Cancer was considered incurable and, in some circles, a loathsome disease. Quacks and charlatans prospered on their false 'cures,' which frequently were more painful than the disease itself. Only a few scientists were optimistic or foolhardy enough to enter this field so likely to end in frustration and defeat.

"The second stage was introduced by a series of intensive public education efforts before World War II which aroused much public and medical interest in cancer control. Hopelessness began to yield.

"We entered a third stage when the society enlisted a growing army of scientists with the promise of support so that they could undertake and continue research on cancer, using their specialized skills and employing all the wonderful new tools — the atomic tracers, electron microscopes and other devices — which a war-spawned Age of Science had recently produced. Research became the keystone of the effort to control cancer; and we began a drive to finance this understaking. We also worked with congress to induce the government to join us in the fight. These efforts were eminently successful.

"The fourth stage now is beginning. Research of the last decade has given us an enormous store of knowledge about the fundamental processes of life — life in health, and life in disease. It has provided us with leads to the chemical and physical causes of cancer and the nature of the cancer cell. We have moved from the age of scarcity in research support to one of moderate plenty. We are now organized so that our research advisory council considers our total research program and adjusts our support to meet the needs of the scientist.

"There is no way of telling how long it will take to control human cancer. We do not know yet where or when the first big break-through will take place. We do know, however, that never before have the prospects been so encouraging."

Prominent among the suspected cancer-causing agents to be studied are viruses and virus-like particles. They are being investigated both from the viewpoint of physical behavior and chemical composition, especially the proteins and nucleic acids which comprise them.

Considerable research will be undertaken into the chemistry of the cancer host. Differences in hormone and enzyme production in normal and cancerous animals and people will be sought; and the natural immune mechanisms, which permit cancer to grow in one host and destroy cancer in another, will be studied.

The grant award list covers a broad field of possible chemical and physical forms of treatment for the cancer patient. Among the agents under study are tumor-destroying viruses, hormones (including pupation hormone which transforms certain wormlike larvae into the insect stage of their development), enzymes and other proteins, nucleic acid derivatives, and a large number of synthetic chemicals.

MEDICAL SECRETARY

THE KEY to improved efficiency in a physician's office may be in the hands of his medical office personnel, a nationwide survey reveals. (Ideal Knowledges, Skills and Personal Qualities of Medical Secretaries.)

Are medical secretaries and assistants properly trained for their jobs? Does the physician-employer properly delegate duties to office personnel to make best use of individual skills and training? Are there tasks which the physician should assign to an aide in order to give him more time to see patients?

These are some of the questions which are answered in a study conducted last year to determine the ideal knowledges, skills and personal qualities of medical secretaries. Conclusions were based on mail-questionnaire information supplied by approximately 500 top-notch medical secretaries and on personal interviews with physicians and business educators. The study was conducted by Harold Mickelson, Northwest Missouri State Teachers College, in co-operation with the American Medical Association. Mickelson completed the study in connection with his work toward a doctor of education degree at Indiana University.

Mickelson analyzed those activities performed in physicians' offices, classifying them into three categories: (1) highly technical medical activities which under normal conditions only a physician can perform; (2) semitechnical medical activities which may be performed satisfactorily by medical office personnel under the supervision of the physician, and (3) business office activities of a routine or management nature which are ideally performed by the secretary or aide.

Mickelson concludes that "physicians are not making maximum use of their extensive training when they unnecessarily perform semitechnical medical and business activities." To help physicians determine what responsibilities can be properly delegated to office personnel, Mickelson is currently preparing a system for assigning duties which will be furnished by AMA to medical societies.

A highly competent secretary, he believes, can relieve a physician of performance of all or nearly all business – office and semitechnical medical activities connected with his practice. The physician, however, still remains responsible for supervision of these activities.

Physicians interviewed agree with Mickelson. One doctor expressed the opinion that "there is almost no ceiling to the responsibility that an outstanding secretary can take over for a physician." Another said: "There is no practical way to practice medicine today without a medical secretary." The consensus was that it is penny-wise and pound-foolish to employ an incompetent aide.

Where can girls get proper medical secretarial training? What kind of schools should offer training to medical aides? Mickelson believes training should be at the post-high school level and that a four-year college degree training program is preferable to a shorter course.

According to Mickelson, only schools with strong business training and strong science departments can offer the kinds of courses and the quality of training that is desirable. His recommendations for course content include development of high-level competency in all generally accepted secretarial skills, business office activities peculiar to the medical office, and all semitechnical activities ordinarily performed by physicians' employees. Semitechnical activities are those related to the examination or treatment of patients, weighing patients, taking temperatures and blood pressures, assisting with minor office surgery or treatment procedures, giving certain types of injections, sterilizing instruments, and conducting some laboratory tests, such as urinalysis and simple blood tests.

Students also must develop certain personal qualities important to their particular job success. These personal qualities were listed by

physicians in interviews and are considered necessary in the good medical secretary or aide. They include: pleasantness, neatness, ability to get along with people, ability to use the telephone effectively, intelligence, politeness, ability to keep secrets, interest in and feeling for people, initiative, honesty, enthusiasm, interest in medical work, loyalty, co-operation, conservatism, pleasant voice, self-confidence, ability to make decisions, ability to instill confidence, willingness to continue to learn on the job, dependability, patience, aggressiveness (must not be shy), accuracy, memory, maturity, and a sense of humor.

On the basis of the survey, a number of steps which medical associations and medical secretary-assistants groups can take to help provide a greater force of better-trained aides in the future are suggested:

1. Encourage schools with the necessary personnel and facilities to offer high-quality medical secretarial training.
2. Recruit high school graduates for high-quality medical secretarial training.
3. Organize or assist in organizing refresher courses in medical office administration for the employed medical secretary and assistant.
4. Persuade individuals currently employed as medical secretaries to increase their effectiveness on their jobs through additional training in school and/or on the job.
5. Point out to physicians the importance of employing well-qualified medical secretaries and remunerating them adequately.

DOCTOR CONTRIBUTIONS TO MEDICAL SCHOOLS

THE AMERICAN Medical Education Foundation reports that physicians gave well over $3 million to medical education in 1956.

The AMEF data gives a breakdown of physician contributions to medical education last year. For the first time, this also includes information on contributions made through alumni campaigns. The report showed:

In 1956, 84,657 doctors gave a total of $3 320,152.14 to the country's 83 medical schools. This total included $1,072,727 given through the AMEF by 39,892 doctors, and $2,247,425 given directly to the medical schools by 44,765 doctors.

The AMEF's million-plus contribution is to be used at the discretion of the schools. The new information shows that most of the contributions made through alumni campaigns are also "unmarked," that is, they may be allocated as the deans of the individual schools see fit.

BRITAIN'S HEALTH SERVICE OF NO VALUE TO EDEN

WHILE BRITIAN'S National's Health Service was in the throes of a crisis, Anthony Eden made a hurried 11,000-mile trip from New Zealand to the Lahey Clinic in Boston for emergency medical care.

Apparently the former British prime minister wanted no part of his country's medicine, which was socialized a decade ago.

It's the second time he has sought medical treatment at the Lahey Clinic. He underwent surgery there in 1953 to correct a bile duct obstruction. Mr. Eden is now suffering from a liver ailment.

Just a few weeks before his trip here, Britain's 40,000 socialized medicine doctors threatened to strike unless the government quits stalling on their demand for a 24 per cent increase in pay. The matter now rests with a royal commission which is to make a study report in October.

MEDICAL-LEGAL SYMPOSIUM

MORE THAN 1,200 doctors and lawyers attended the three regional 1957 medico-legal symposiums sponsored by the committee on medicolegal problems and the law department of the A.M.A. in Atlanta, Denver, and Philadelphia. The sessions were held on three successive Fridays and Saturdays. They were so successful that similar sessions are already being planned for 1959 in the East, Midwest, and the West.

Dr. Herman A. Heise, Milwaukee, opened each symposium with a discussion of the chemical tests now being used for intoxication. In each of the cities, his talk was followed by a mock-trial demonstration in which a "drunken driver" was convicted from evidence obtained through a breath test.

The second day's session in each city featured a panel discussion on "Trauma and Cancer," followed by a lecture on "Medical Expert Testimony," and a final question-and-answer period.

Dr. David B. Allman, A.M.A. president-elect, outlined four areas where doctor-lawyer co-

operation is needed: The briefing and use of physicians who must testify in court; enactment of a law to provide tax deferments for the self-employed to be used for retirement funds; narcotics control and care of addicts, and development of an inter-professional code of ethics for the two professions.

The two-hour mock-trial demonstration was supplemented by showing of "The Medical Witness," a motion picture produced by the William S. Merrell Company in co-operation with the A.M.A. The film points up common mistakes made in court by both doctors and lawyers.

"Purpose of these meetings," said C. Joseph Stetler, director of the A.M.A. law department, "is to insure fair settlement of cases in court which require medical testimony. Many lawyers and doctors feel that a better liaison between the two professions will cut down immeasurably the high number of medicolegal suits."

MECHANICAL QUACKERY

THIS IS a slide film with sound pointing out some of the devices that are available on the American market and a threat to health. It was prepared by the American Medical Association for viewing by professional groups and by the general public. Some of the highlights cover the Pol-izer which was advertised as a cure for diabetes and dandruff; the Spectro-Chrome, numerous radioactive cure-alls, a Depolaray which was alleged to be good for more than 100 diseases, and the Radioclast, one of the more elaborate fakes listed. This is so informative, yet non-technical, that it is suitable for medical meetings or teenagers.

MEDICAL TEACHING MOTION PICTURES

THE FOLLOWING is a new list of medical teaching motion pictures offered by the Pfizer Professional Service Department:

1. Stress and the adaptation syndrome, by Dr. Hans Selye that is in color and sound, 35 minutes in length.

2. Dynamics of the tubercle, by Drs. Robert E. Ebert and William R. Barclay; color and sound; 28 minutes in length.

3. Active management of disability in the aged, by George C. Stoney in collaboration with Drs. Frederic D. Zeman and Leo Dobrin; black and white, 40 minutes.

4. The bronchopulmonary segments, Part I: Anatomy and broncoscopy, by Dr. Leo L. Leveridge; color and sound; 31 minutes.

5. Nephrosis in children, produced in collaboration with Dr. Robert E. Cooke; color and sound; 18 minutes.

6. The antibiotics and terramycin; color and sound; 22 minutes.

ARIZONA BLUE SHIELD

THE NINTH annual meeting of Arizona Blue Shield was held in Yuma April 10 in conjunction with the Arizona Medical Association convention.

Newly-elected officers were: Virgil Toland, M.D., Phoenix, president; Noel Smith, M.D., Phoenix, president-elect; Florence Yount, M.D., Prescott, vice president; Carl A. Holmes, M.D., Phoenix, secretary; E. N. Holgate, banker, Phoenix, treasurer. Dr. Toland succeeds G. Robert Barfoot, M.D., Phoenix, who completed his term as president, a term that saw in-office surgery, payments for the assistant surgeon and a thoroughly re-evaluated schedule of surgical allowances added to the program.

From the annual report came some illuminating and interesting facts. For example, out of an income of $1,374,570.09, $1,073,509.04 was used as payments to doctors for services rendered Blue Shield members. Actually out of each dollar's income for 1956, to break it down even more, nearly 85 cents went to provide for the care of members, past and future. Since the plan's inception back in 1948, cumulative payments to doctors have amounted to $5,774,-285.04; 1956 marked the first experience where payments went over the million dollar mark in one year.

The five procedures accounting for almost 50 per cent of the services were in order: Normal maternity, T & A, hysterectomy, fractures and appendectomy.

Perhaps the most dramatic fact is the growth of the plan. In 1948 there were 33,476 members. By the end of 1956 there were 139,893 members (that figure is already well over 140,000 into 1957).

Dr. David Engle, Tucson, attended the National Blue Shield Professional Committee meeting in Chicago, February 11-13. Reports indicate

it was an excellent and informative session.

EMERGENCY MEDICAL CARE CARD — Connecticut

A MEDICAL "passport" for emergency care is now available to physicians for their patients' protection in the event of an accident. According to James G. Burch, executive secretary of the Connecticut State Medical Society, preliminary tests have indicated a high degree of acceptance of the medical information card among both physicians and patients.

The card is separated into three sections – when folded, it can easily be inserted into the identification section of a wallet. One portion of the card bears a note explaining its purpose and this portion can be detached after the note is read. The other two portions are folded so that personal identity, personal description and name of family doctor appear on the outside, medical information on the inside. As the copy points out, the card provides information instantly – and notations about physical conditions often affect the manner of emergency treatment (as in allergy cases, drug sensitivities, and diabetes).

Cards have been sent, with a cover letter, to physicians in test areas throughout the state. The letter explains the card's use and offers additional quantities for distribution by doctors. In line with promotion plans, a suitcase exhibit titled, "An Invitation to Protect Your Life" has been placed in the lobby of the Yale department of public health, school of medicine. The legend reads: "Americans go everywhere – cars, trains, ships and planes transport us day and night. This means we're often away from home. And, if an emergency should then arise, quick information might be needed for medical care. The emergency medical card has been designed to meet that need. Take the card to your next physical examination. Your doctor will be glad to help you protect your health."

(We could profitably adapt this for use in Arizona – Editor.)

POLICY GUIDES ON PUBLICITY — California and New York

EVEN WHEN representatives of medical societies, hospitals and public information media agree on methods of releasing publicity, there is often need for a written statement of policy or procedure.

One of the most recent policy guides is a co-operative effort on the part of the San Francisco Medical Society press relations committee and the San Francisco Hospital Conference. The guide is particularly concerned with publicity emanating from hospitals on costs, operation, equipment, techniques and personnel. One portion of the guide states that such publicity is desirable "in order that the public may have the fullest possible understanding of the economics of hospital operations, the elements which enter into the rates charged for hospital care and special services, and the place of hospitals in the health care of the community."

The Medical Society of the State of New York has issued a second edition of its "A Guide for Co-operation." This policy statement is divided into three sections – one concerning the release of information by doctors, another concerning hospital publicity and the third covering the use of such information by press-radio-TV. Except for a minor change in context, a new letter of acknowledgement, and a change in format (from 5" by 7" size to that of a standard business envelope), the 12-page booklet contains about the same basic recommendations as previously.

STATE LEGAL AFFAIRS COMMITTEE DESCRIBED IN NEW BOOKLET

THE LEGAL affairs committee of the Montana Medical Association has published an outline of its aims and activities in an eight-page brochure entitled, "Liability." Among the major purposes of the committee are: To advise, on request, members of the association when they are confronted with medicolegal problems, to review medical testimony, to co-operate with the association's mediation and public relations committees regarding the rights of the public, and to co-operate with the Montana Bar Association or its component societies in medicolegal matters.

In a foreword to the pamphlet, Dr. Louis J. Regan wrote: "In the final analysis, it is the physician himself who is responsible for the continuing existence of the vicious malpractice situation. . . . prevention is the best defense against malpractice." Also printed in "Liability" are 23 commandments developed by Dr. Regan as a physician's guide to preventing professional lia-

bility claims. Copies of the booklet, "Liability," may be obtained from L. R. Hegland, Executive Secretary, Montana Medical Association, 1236 North 28th St., P. O. Box 1692, Billings, Mont.

THE CLINICAL MANAGEMENT OF VARICOSE VEINS by David Woolfolk Barrow, M.D. 169 pages. Illustrated. (1957) Hoeber-Harper. $6.

Diagnosis, therapy, and aftercare are explicitly presented from extensive personal experience. Discussion of theoretical or controversial points is limited and emphasis is put on concise and graphic accounts of therapeutic procedures. When palliative relief is the only recourse, the author explains how to get the best possible results.

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Future Meetings

Rocky Mountain Cancer Conference
PRELIMINARY PROGRAM

Wednesday, July 10

Morning — Lincoln Room

9:30-11:45 — Symposium on Cancer of the Stomach; Presiding, Kenneth C. Sawyer, M.D., Denver. Participants: L. Henry Garland, M.D., San Francisco; Joseph Bank, M.D., Phoenix; Alton Ochsner, M.D., New Orleans; Joseph Cunningham, M.D., Birmingham.

12 noon — Luncheon, Round Table Discussion; Presiding, Frank B. McGlone, M.D., Denver.

Afternoon — Lincoln Room — Presiding, Clinton S. Lyter, Colonel M.C., Aurora.

2-2:30 — Arthur T. Hertig, M.D., Boston; "Pathology of Ovarian Tumors."

2:30-3 — Richard H. Overholt, M.D., Boston; "Management of Benign Intra-Thoracic Lesions."

3-3:30 — Alton Oschner, M.D., New Orleans; "Cancer of the Thyroid."

3:30-4 — Joseph Bank, M.D., Phoenix; "Diagnostic Problems of Cancer of the Pancreas."

Evening — Green Gables Country Club

6:30-7:30 — Cocktail Hour.

7:30 — Banquet; Speaker, Kenneth McFarland, Ph.D., Educational Consultant and Lecturer, General Motors Corporation; "Ropes of Gold."

10-12 — Dancing.

Thursday, July 11

Morning — Lincoln Room

9:30-11:45 — Symposium on Cancer of the Lung; Presiding, Mordant E. Peck, M.D., Denver. Participants: Richard H. Overholt, M.D., Boston; L. Henry Garland, M.D., San Francisco; Seymour Farber, M.D., San Francisco; Joseph A. Cunningham, M.D., Birmingham.

12 noon — Luncheon, Round Table Discussion; Presiding, James E. Lewis, M.D., Colo. Springs.

Afternoon — Lincoln Room — Panel on Cytology;

2-2:20 — Joseph A. Cunningham, M.D., Birmingham.

2:20-2:40 — Seymour Farber, M.D., San Francisco.

2:40-3:10 — Arthur T. Hertig, M.D., Boston; "Genesis of Cancer of the Cervix."

3:10-3:30 — Questions and answer period.

For additional information, contact John S. Bouslog, M.D., Chairman, Cancer Conference, 835 Republic Building, Denver 2, Colo.

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11TH GENERAL ASSEMBLY WORLD MEDICAL ASSOCIATION

THE FORTHCOMING 11th General Assembly is to be held in Istanbul, Turkey, – the world's "oldest and newest city" – you are confronted with a tempting opportunity to visit all the world famous centers of medical lore and historical interest between the Atlantic and the Bosporus. The dates of the assembly are September 29 to October 5, 1957. The pre-registration fee of $15 includes your attendance at the annual dinner and an excursion, on which further information will be available later.

THE AMERICAN COMMITTEE ON MATERNAL WELFARE, INC.

A COMPREHENSIVE review of complete maternity care will be presented by the American Committee on Maternal Welfare at the Seventh American Congress on Maternal Care (formerly known as the American Congress on Obstetrics and Gynecology) to be held at the Palmer House, Chicago, July 8-12, 1957.

The five-day congress – under the leadership of F. Bayard Carter, M.D., professor and head of the Department of Obstetrics and Gynecology at Duke University, Durham, N. C., and Samuel B. Kirkwood, M.D., Commissioner of Public Health for the Commonwealth of Massauchusetts, and Professor of Maternal Health at Harvard Medical School – will present topics dealing with the interprofessional approach to maternal and infant care. The program committee, composed of organizational representatives from obstetrics-gynecology, general practice, pediatrics, anesthesiology, nurse anesthesia, nursing, nutrition, public health, hospital administration, mental hygiene, and social service, has developed a program to afford maximum opportunity for audience participation.

Speakers and registrants at the panel discussions, luncheons, round tables, breakfast conferences and laymen's forum will examine and pursue the questions: "What is complete maternity care?" "Who provides it?" "How is complete maternity care provided?"

Many of the 4,000 expected to attend are planning to combine valuable educational experience with a vacation.

Further information can be attained by writing: The American Committee on Maternal Welfare, 116 South Michigan Avenue, Chicago 3, Ill.

ANNUAL OTOLARYNGOLOGIC ASSEMBLY

THE DEPARTMENT of Otolaryngology, University of Illinois College of Medicine, announces its annual assembly in otolaryngology from September 30 through October 6, 1957. The assembly will consist of an intensive series of lectures and panels concerning advancements in otolaryngology, and evening sessions devoted to surgical anatomy of the head and neck, and histopathology of the ear, nose and throat.

Interested physicians should write direct to the Department of Otolaryngology, 1853 West Polk Street, Chicago 12, Ill.

CONGRESS OF LEGAL MEDICINE

THE FIRST American congress of legal medicine and law-science problems to be conducted by the Law-Science Institute at the Hotel Morrison, Chicago, Monday, July 8 – Saturday, July 13, 1957 inclusive and Monday, July 15 – Saturday, July 20, 1957 inclusive, with aid and cooperation from the Law-Science Academy of America and the Law-Science Foundation of America.

ARIZONA CANCER SEMINAR, JANUARY 1958

THE 1958 meeting of the Arizona Cancer Seminar will be held at the Tucson Inn, Tucson, Arizona, January 23, 24 and 25, 1958. The faculty consists of the following members:

Dr. A. N. Arneson, gynecologist, St. Louis.

Dr. James Barrett Brown, plastic surgeon, St. Louis.

Dr. Ross Golden, radiologist, Los Angeles.

Dr. C. F. Lehman, dermatologist, San Antonio.

Dr. Ian Mcdonald, surgeon, Los Angeles.

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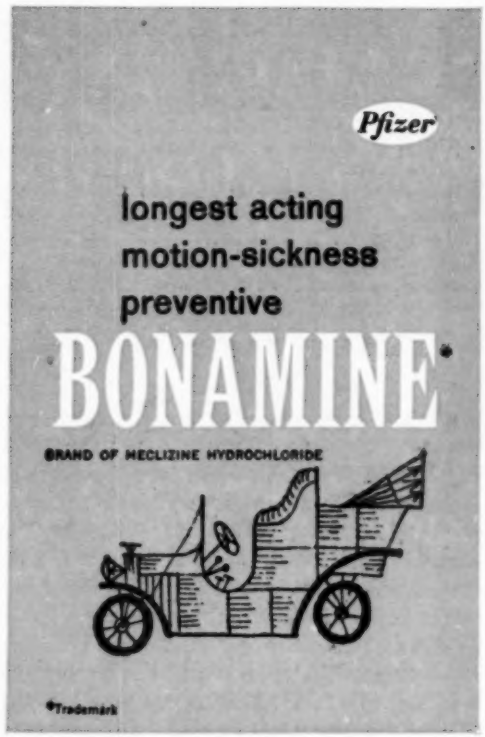

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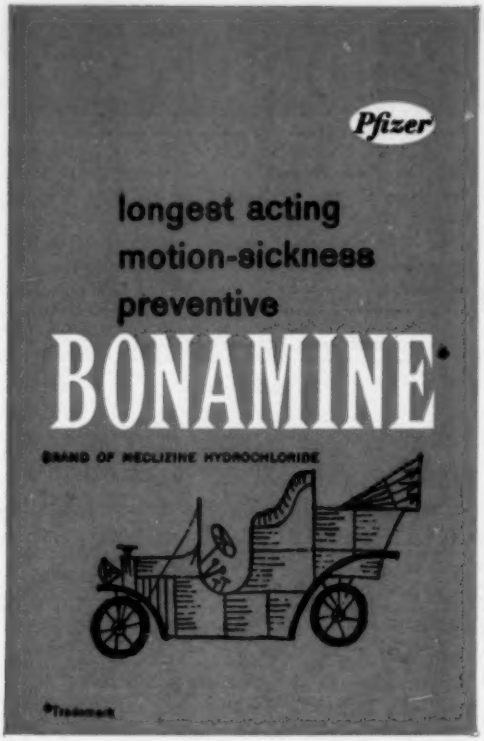

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PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL
PRESENTATION OF CASE NO. 21

History: The patient, a 28-year-old white man, was admitted to Birmingham Veterans Administration Hospital on March 23, 1950. He had been in good health until February 1, 1950, when he developed a severe chest cold with cough and pain in the chest lasting several days. The pain then settled in the abdomen, lumbar area, in the neck and the back of the head. On March 1, 1950, he was admitted to a Pomona hospital for two days where a blood Wassermann test was reported negative, but the spinal Wasserman was reported positive. As a result, he was treated with 5 million units of penicillin. There had been no previous history of a penile lesion or of positive blood test for syphilis. During treatment, the patient developed weakness of the legs and had difficulty walking. He also experienced counter-clockwise vertigo. On March 7, 1950, he was admitted to the Los Angeles County General Hospital because of inability to swallow. The mouth was pulled to the right, the left eyelid would not stay open, and vision in the left eye had failed rapidly. A spinal tap was negative for syphilis and acute poliomyelitis. During 16 days at the county hospital his condition became progressively worse, and four days before transfer to Birmingham VA Hospital the patient's left testicle became tender and swollen. At the same time he developed numbness of the fingers and toes.

Past history: The patient had mumps bilaterally at the age of 10. Since the age of 15, he had noted several soft lumps under the skin of the arms and legs. Several of these, diagnosed as "fatty tumors," were removed while he was in the navy.

Physical examination: On admission to Birmingham VA Hospital, the patient was acutely ill with a temperature of 99° F. He showed evidence of marked weight loss, dysarthria, and lethargy, but he was mentally oriented and cooperative. The pharynx was slightly red. The lungs were clear to percussion and auscultation; no rales were heard. The breath sounds were normal. The heart was of normal size; the rate was 120 and regular. Examination of the abdomen revealed no tenderness or abnormal masses, and the liver and spleen were not palpable. The left testicle and epididymis was extremely tender and swollen. There was mild tenderness over the seventh throracic spinous process and in the iliosacral regions bilaterally. All extremities were markedly emaciated, particularly the legs. There was pes cavus of the right foot. There was a diffuse, macular, erythematous rash about the neck and chest. There was mild enlargement and tenderness of the inguinal lymph nodes bilaterally.

Neurologic examination (cranial nerves): The sense of smell was normal. The visiual fields were full to gross testing. Vision was grossly normal. The fundi showed blurring of the disks bilaterally without measurable elevation. The retina veins were full. Bilateral droop of the lids was a result of paresis of the levator palpebrae muscles. There was a paralysis of lateral gaze with the right eye and paresis of lateral gaze in the left eye. Weakness and subjective double vision were noted on looking down and center with both eyes. The corneal reflexes were absent bilaterally. Hypesthesia was found in the second and third divisions of the trigeminal nerve with paresis of the muscles of mastication bilaterally. A complete bilateral peripheral facial paralysis was present. The hearing was normal bilaterally. The palate was weak on elevation. The patient had dysphagia and dsyphonia. The tongue could not be protruded normally. *Sensory examination:* Bilateral hypalgesia without hypesthesia was present from C-2 through C-7. Pain, touch, vibration, and position senses were normal in the lower extremities. *Reflexes:* The biceps and triceps reflexes were hypoactive and equal. The superficial abdominal reflexes were present. The knee and ankle jerks were 1 plus.

There were no pathologic toe or finger signs. The Kernig and Brudzinski signs were positive. *Cerebellar tests:* Bilateral ataxia and dysmetria in finger to nose tests were demonstrated.

Laboratory studies: The red blood count on admission was 4,250,000, hemoglobin 11.8 gm., and the white blood count 8,700, with polymorphonuclear leukocytes 61 per cent, lymphocytes 36 per cent, monocytes 3 per cent, eosinophils 0, basophils 0, and blast forms 0. Spinal fluid examination showed 182 lymphocytes with 116 mg. of protein. The fluid was clear, the pressure and dynamics normal. A portable chest x-ray at 60 inches distance showed no abnormalities.

Course in hospital: Twenty-four hours after admission, the patient began to run a fever which lasted 72 hours with the temperature up to 104° F., on two occasions. He was placed on Aureomycin, Chloromycetin, and Crystacyllin and there was a drop in temperature. The patient was seen on March 25, 1950, by Dr. J. M. Nielsen, senior consultant in neurology, who made a diagnosis of meningoencephalomyelitis of viral origin. The patient continued to improve slowly but began to have periods of disorientation and confusion. His appetite remained poor and his strength very weak. On April 1, the only cranial nerve involvement noted was residual weakness of the third and seventh cranial nerves bilaterally. At this time the patient developed an epididymitis which apparently responded to medication, but the swelling in the epididymis and testicle never disappeared. All antibiotics were stopped at this time. The patient required more or less continuous sedation because of severe low back pain. The daily fluid intake was around 6,000 cc. and the output 5,000 cc. This was explained by presumed involvement of the hypothalamus. On April 14 the patient's hemoglobin dropped to 9 gm. and the persistent anemia became more severe. The patient received 1,000 cc. of whole blood. He remained confused although he was able to be in a wheelchair for part of the day. The patient developed exposure keratitis from incomplete lid closure due to his bilateral seventh nerve weakness.

On April 12 the blood count showed 3,250,000 red blood cells, hemoglobin 10.2 gm. and 7,900 white blood cells. At this time he had an abnormal differential showing 46 per cent polymorphonuclear leukocytes, 30 per cent lymphocytes, and 22 per cent monocytes, 2 basophils.

On April 17, 1950 temperature was 98° F., pulse 88, respirations 20. The patient was able to swallow better and was placed on a soft diet. On April 25 he was again seen by Dr. Nielsen, who found marked weakness with generalized muscular atrophy including the face. The sense of smell and visual fields were normal. Papilledema was present and there was a bilateral sixth nerve weakness. The left pupil was dilated and reacted sluggishly to light. There was recovery of sensation in the face, but the patient had trouble hearing with the left ear. The face was completely paralyzed bilaterally with a Bell's phenomenon. All deep reflexes were absent and a Babinski sign was found on the left. The superficial abdominal reflexes were present.

On May 6, temperature was 103° F., pulse 120, respirations 14. At this time disassociated movements of the eyes developed and the patient was placed in an oxygen tent. A Levine tube was introduced into the stomach because of abdominal distention. On the same evening the temperature was 103° F., pulse 140 and respirations 15. Blood pressure was 120/80. Papilledema was present with retinal hemorrhages. For the first time the spleen was palpable at the left costal margin, and the liver two fingerbreadths below the right costal margin. Large inguinal lymph nodes were present bilaterally. Because of the lack of improvement, a blood count was ordered which disclosed the unexpected following findings: the total white count was 240,000, and a smear disclosed numerous young cells, probably immature myelocytes. The fluid aspirated from the Levine tube showed evidence of recent bleeding. The stool showed the presence of occult blood. The patient began to bleed rapidly following attempted venepunctures, and large areas of ecchymosis developed. The red blood count was 3.7 million and the hemoglobin 10 gm. Hematocrit study showed one-fifth of the cells to be white blood cells. At this time a diagnosis of myelogenous leukemia was made and the patient was given blood transfusions.

On May 6, the total white count was 278,000. The patient was markedly weak, perspiring profusely, and the platelet count was 20,000. A course of aminopterin and toluidine blue was given. Within 24 hours the patient developed visual hallucinations and became terminal, dying that evening. (The laboratory data obtained dur-

following table.)

Date	RBC	Hgb.	WBC	PMN	Lymphs	Mono.	Eos.	Baso.	Blasts.
3/24/50	4.25	11.8	6,700	63	32	3	0	0	0
3/24/50	Spinal fluid - 122 lymphocytes, 118 mg. protein, clear fluid, normal pressure.								
3/27/50	4.92	14.5	8,750	54	36	4	6	1	0
3/28/50	Spinal fluid - 28 lymphocytes, 130 mg. protein, clear fluid, normal dynamics.								
4/4/50	4.08	12.1	9,050	52	39	7	1	1	0
4/12/50	3.25	10.0	7,900	48	30	22	0	2	0
4/18/50	4.19	13.2	-	-	-	-	-	-	-
4/26/50	3.82	12.1	-	-	-	-	-	-	-
5/5/50	3.70	10.2	278,400	16	64	11	10	-	8
				8 stabs, 1 juv., 1 promyelocyte, many unclassified basket cells.					
5/5/50	NPN 41 mg. per cent, CO_2 50 vol. % (equiv. to 22.4 mEq/l)								
5/6/50	3.35	10.6	210,000	14	76	8			
							1 promyelocyte. 22,000 platelets		
5/7/50	3.89	10	142,000	10	67	0	1	2	-
				3 promyelocytes, 1 blast.					

Case History for Discussion
CLINICAL CLUB
February 27, 1956
Leslie R. Kober, M.D.

This is a rather involved three-page clinical case which starts out as a severe chest cold in a 28-year-old white man, in which we are given three diagnoses in the course of the protocol. First, because of a positive spinal fluid Wassermann, he was treated for syphilis with 5 million units of penicillin, although no other confirmative evidence seems to be found. Then, as he continues to develop neuromuscular indications of progressive disease, we are given the diagnosis of meningoencephalomyelitis of viral origin by a consulting neurologist. Finally, when an unexpected leucocytosis of 240,000 with numerous immature myelocytes was found, we are given a diagnosis of myelogenous leukemia. From this time on the course was rapidly terminated as one would expect with an acute thrombocytopenia and leukemia in spite of treatment with aminopterin and toluidine blue.

Our problem then would seem to be to try to tie all these diagnoses together and come up with a simple explanation. I think we can quickly dispose of the syphilitic diagnosis by saying that there was no supportive evidence. Although syphilis can mimic almost any kind of disease and might be considered to explain this whole picture had there been other evidence. We frequently get a false positive in virus infections, and the statement from the Los Angeles County General Hospital that the spinal tap was negative for syphilis and acute poliomyelitis, I will assume to be correct.

We are then left with an attempt to explain a case of viral meningoencephalomyelitis which terminated in acute leukemia. In reading and re-reading this case numerous times it has seemed to me pretty much a waste of time to try carefully to locate anatomically each of the neurological findings, and here again I will accept the diagnosis of a generalized viral infection which involves the spinal cord, meninges, and the brain tissue itself. Also, it seems rather hopeless without bone marrow studies for me to come up with anything more definite in the way of a definite type of leukemia. We must first however mention the many possibilities which should be considered and then, by various processes of mental telepathy or logic, to try to come up with some sort of an answer. This involves two or three processes. First, one must think of various pathological conditions such as syphilis, TB, lymphoma of the Hodgin's type, myeloid metaplasia, lymphosarcoma, reticulum-cell sarcoma, sarcoidosis, carcinoma; collagen diseases, especially lupus, and various mycotic diseases including actinomycosis, histoplasmosis, moniliasis, blastomycosis, coccidioidomycosis, torulosis, aspergilosis, and strepto-thricosis; and for good measure one might throw in such conditions as teratoma (because of the genital involvement) and infectious mononucleosis (because of the 22 per cent monocytes on one of the blood counts).

The other phase of determining a Clinical Club case based on logic rather than scientific fact is always the problem of "why was this case picked?" Secondly, did the man who picked the case have some special hobby that he would like to point up? This type of logic would leave Dr. Warrenburg completely out of the picture because he has no interest, as far as I can determine, in this type of case. While Dr. Eisenbeiss, although more definitely interested in surgical lesions in the brain, might occasionally pick such a case. Dr. White has a definite interest in leukemia, poliomyelitis, viral infections, and I might add, infectious mononucleosis. I cannot rely too much upon this type of logic for a final diagnosis, although I am in favor of Dr. White having picked this case.

It seems to me that some generalized process such as Hodgkin's or lymphosarcoma in a young man of 28 would be much more likely than carcinoma or any other of the malignant type of lesions; and it seems possible that metastasis involving the bone marrow, brain, spine, etc., might eventually end up in an acute leukemic condition. However, I do not see how it is possible to make such a diagnosis without a microscopic examination of some of the tissue. ing the patient's illness are summarized in the

With an initially normal blood count and differential, one might have to consider aleukemic leukemia with early infiltration into the spine and central nervous system, or some such rare condition as an agnogenic myeloid metaplasia which later became acute and developed findings of an acute leukemia.

Isaacs (Oxford Medicine) states, "The cause of leukemia in man is not known." He goes on to say that "Among the theories of the etiology are (a) neoplastic theory, a type of cancer, (b) a response to infection, (c) a deficiency disease, loss of control of hematopoietic function."

He also states, "Syphilis is not a cause of leukemia, although a few cases of syphilis have been reported with a leukemoid blood picture."

Kaplan (Cancer Res., Sept. 1954) believes that "to account for the bulk of human leukemias, it would be necessary to widen our horizons beyond such agents as radiation and benzol and to look with suspicion on any chemical, drug, or body reaction, such as hypersensitivity, which is capable of causing severe injury to hematopoietic tissues." He further states that "the leukemias do not spring abruptly from previously normal tissues, but burst into flame, as it were, from a smoldering, pre-existent hematopoietic disorder of varying origin and morphology."

This might explain our case. Assuming we had a beginning virus pneumonitis which, with the aid of intensive penicillin therapy, spread to the central nervous system and although the meningoencephalomyelitis symptoms subsided with some residual damage, a latent leukemic process was stimulated suddenly to burst into flame.

In looking through a few volumes of Index Medicus, I found a few interesting titles:

"Etiopathogenesis of leukemia; virus factor."

"Relation between reticulosarcoma and leukemia."

"Relationship of polycythemia vera to leukemia."

"Lymphosarcoma ending in leukemia."

"Primary neoplasm of the spleen with leukemia reaction."

"Experimental meningoencephalitis of rabbit after injection of post-filtration leukemic products; presence of intracellular bodies in brain."

"Infectious origin of leukemia."

"Landry syndrome associated with leukemia."

"Report of a case of subacute granulocytic leukemia following infectious mononucleosis."

If I had had time to read all these and digest them, I still might never have come up with the correct answer, but at least they stimulated some thought on my part. The ordinary textbook on medicine begins its definition of acute leukemia by saying "This is a rapidly fatal disease of unknown etiology –."

In view of the few titles which I have just mentioned, it seems unwise however not to give some consideration to lymphosarcoma, or Hodgkin's disease with a terminal leukemia, and also to consider leukemic infiltration prior to the blood picture. Even though I know Dr. White is interested in infectious mononucleosis and that the monocytes were high on several blood counts, I cannot force myself to accept this diagnosis unless we consider it as part of a vital infection.

My preference for diagnoses:

(1) Viral pneumonitis, with meningoencephalomyelitis terminating in leukemia.
(2) Malignant lymphoma or lympho-sarcoma with terminal leukemia.
(3) Syphilis.

DISCUSSION

O. O. Williams, M.D.

Since I am having someone do my work for me in this discussion, I'll make it brief. Even with a long review and evaluation, my answer would probably be wrong. However, only five years separate me from the correct diagnosis. In 1945, I was stationed at Birmingham General Hospital, later Birmingham Veterans Hospital. Had this patient been five years earlier in developing his disease, or I five years later in leaving the hospital, we would have met under unfortunate circumstances and I might have known the correct diagnosis.

All symptoms, signs, and laboratory data point to a malignant lymphoma of some type. For the pathologist, the grouping of all the neoplasms of the reticulo-endothelial system under the general heading of malignant lymphoma is very convenient. In most instances, the histological pattern may determine the type, but frequently even with this available, one has great difficulty in differentiating one from any of the others.

The general term, malignant lymphoma, includes all leukemias, mycosis fungoides, lymphosarcoma, leucosarcoma, Hodgkin's disease, reti-

culum cell sarcoma, chloroma, giant follicle lymphoma, and plasma cell myeloma and leukemia. The multiplicity of clinical manifestations in this case indicate a generalized disease such as leukemia rather than more local involvement as is found in Hodgkin's disease, follicular lymphoblastoma, or lymphosarcoma. Many of the symptoms may have resulted from thrombosis or hemorrhage as well as actual neoplastic invasion. I vaguely remember a somewhat similar case in which a diagnosis of myeloma was correctly made. This case also reminds me of a patient, I believe of Les Smith, who was treated for an intractable cold and virus pneumonia in Alaska but in a few weeks was found to have plasma cell myeloma.

However, a few other conditions have to be considered. There is a possibility of a leukemoid reaction. This occurs in many diseases such as overwhelming infections, metastatic neoplasms, particularly lung and liver cancer, and even without a known etiological factor. With the exception of whooping cough, the granulocytic series of white cells are generally involved. The total count rarely reaches 200,000 per cumm. There is also a possibility of myeloid metaplasia. This also involves the granulocytic cells and is usually the result of the replacement of bone marrow by fibrosis (myleofibrosis, bone (marble bone) or neoplasm. Although young forms are present, the total count usually does not rise above 50,000 per cumm. I cannot see either of these processes in this case.

I cannot understand why this case was diagnosed myelogenous leukemia, since the increase in white cells was lymphocytic in type. Also basket cells, usually degenerate lymphoblasts, were present. This indicates a lymphocytic lymphoma. It is true that micro-myeloblasts, as is found in some acute or subacute leukemias, resemble lymphocytes but are myeloblasts. However, these cells contain "Auer" bodies, and no mention is made of such finding.

We might consider other cancer cells which might be mistaken for lymphocytes. The neuroblastoma cell of neuroblastoma of the adrenal gland, retinoblastoma and neuroblastoma of the cerebellum resemble lymphocytes both in smears and in sections. These tumors usually occur in a younger age group. Also undifferentiated cells of tumors of the respiratory tract such as lymphoepithelioma may resemble lymphocytes. I do not believe it is either of these conditions.

One also has to consider fungi which might resemble lymphocytes. Yeast (Monilia) and torula could be mistaken for lymphocytes. However, this case does not resemble an infection as such. Also, in these cases, while the spinal fluid might show an increase in cells, the peripheral blood cells should not necessarily be increased. Blastomycosis also could be considered, to be discarded because of the more chronic course in this disease and the marked increase of leukocytes.

Having decided on malignant lymphoma as the most likely diagnosis, the problem seems to be one of identification of the type. A skin biopsy, bone marrow studies, biopsy of a lymph node and x-ray of flat bones are indicated. With the aid of one or all of these. I am sure a reasonably correct diagnosis could be made. Protein studies with A/G ratio might help to rule in or out plasma cell myeloma. In this disease, especially the rapidly progressive leukemic type, anemia would be more marked and rapidly progressive. Hodgkin's disease, excepting Hodgkin's sarcoma, would appear locally first and not show an increased white blood count. Hodgkin's sarcoma and reticulum cell sarcoma would be an acute but not likely cause of an increase in cells. Monocytic leukemia of an acute type might cause all the symptoms and signs of this patient, but the white count usually does not go beyond 40,000 to 50,000. Follicular lymphoma is more chronic in character, usually lasting for years. Likewise, mycosis fungoides is slowly progressive with skin lesions predating the leukemic blood picture. Lymphosarcoma, called leucosarcoma when associated with increased white blood cells in the peripheral blood, is somewhat more chronic in character than present in this case.

The differentiation would seem to be between myelogenous and lymphatic leukemia. While I have discussed this case in a general way with little reference to specific symptoms, however, the clinical course is one of an acute or at least subacute disseminated process in spite of a smear showing in general mature cells. The testicular tenderness and swelling is not too uncommon in leukemia, but I believe is found more commonly in lymphatic leukemia. The appearance of lymph nodes would likewise suggest lymphatic leukemia as they would occur

late if at all in acute myelogenous leukemia. The cytological studies, if accurate, show a fairly rapid increase in the lymphocytic series of cells. The immature granulocytes may be the result of bone marrow replacement by lymphoma cells. All the neurological signs as well as spinal fluid findings indicate a diffuse lymphoma. The liver and splenic enlargement could be present in any of the lymphomas or, if this is a case of myeloma, could be due to amyloid.

However much I would like to call this plasma cell leukemia, all the data, clinical and laboratory point to a lymphatic leukemia, acute in type with some unusual clinical findings.

Therefore, my diagnosis is malignant lymphoma (an all-inclusive term), probably acute lymphatic leukemia.

DISCUSSION

DR. C. W. OLSEN (senior consultant in neurology): The history on admissions was that of the invasive stage of an infectious illness, followed by polyneuritis, meningitis, and encephalomyelitis. The possibility of syphilis was fairly well excluded. A history of mumps at age 10 made epidemic parotitis unlikely, in spite of epididymo-orchitis. However, the testicular infection might well be due to retention of urine.

The blood count on March 8 showed stimulation of leukocytic elements, with a fairly even distribution except for some relative increase in monocytes. The spinal fluid on that date showed evidence of meningeal irritation and increased intracranial pressure. The finding of subcutaneous nodules brought in a suspicion of neurofibromatosis.

Enlargement of inguinal lymph nodes in the absence of tributary infection should arouse suspicion of general lymphoid stimulation. (The lymphatic drainage of the testes is toward pelvic rather than inguinal nodes.)

The neurologic findings are more suggestive of a diffuse or disseminated reaction rather than any single focus of disease. Recheck of the spinal fluid on March 24 and 28 showed an increase in the cell count with persistence of increased protein. A remarkable change in the leukocyte count is suggested by comparison of the March reports with those in May, and the predominant increase in lymphocytes is consistent with lymphoid leukemia, especially considering the splenomegaly and increasing lymphadenopathy. Meanwhile the evidences of involvement of the central nervous system altered a little and hallucinations were reported. Several agglutinations for specific viruses were negative. Antibiotics were administered, but without evident benefit.

In retrospect, this case is one of lymphoid leukemia with early neurologic symptoms. Infectious mononucleosis must be considered in differential diagnosis.

In neurologic practice, as contrasted with general practice, leukemia commonly has neurologic complications. The interesting thing in this case is that the nervous symptoms cannot be fully explained by such characteristic lesions of leukemia as leukocytosis, cellular infiltration, thrombosis, and hemorrhage. This raises the question of the presence of a neurotoxin or neurotropic virus associated with some leukemias, that is, an agent noxious to the nervous system as well as to the hemopoietic system. The neurologic complications of infectious mononucleosis represent such a relationship.

NECROPSY REPORT

DR. B. E. KONWALER: The body was that of a somewhat cachetic but otherwise normally developed white male who appeared to be about 30 years of age. The important findings on external examination were; first, the presence of a few cervical lymph nodes which were palpable externally; second, the presence of a number of petechiae, especially over the extremities and over the anterior chest; and third, the definitely enlarged liver and spleen which were readily palpable below the costal margins. On opening the thorax, a large greyish-white, firm mass was seen in the anterior mediastinum. The mass measured approximately 7 x 5 x 4 cm. and partially encircled the trachea, but did not significantly narrow the lumen of the trachea. The mass extended superiorly to surround some of the major vessels at the base of the neck, but here again the lumens of vessels were not significantly narrowed. The parietal pleura in both pleural spaces contained a few nodules, greyish-white to light pink in appearance and of rather firm consistency. On cut sections, these nodules had approximately the same color as the mass just described in the mediastinum.

The heart was not enlarged, weighing only 250 gm. In the midportion of the interventricular septum, mainly in the anterior half, there was seen a 1 cm. greyish-white nodule. This nodule

was quite firm and again had the appearance of the tumor nodules described previously. The endocardium had a smooth, glistening, white appearance. The valve measurements were all within normal limits and there was no significant atherosclerosis of the coronary vessels.

Both lungs were somewhat wet and boggy, the right weighing 700 gm. and the left 750 gm. On pressure of the lungs, fluid exuded readily from the cut surfaces. The liver was considerably enlarged, weighing 2,700 gm. The cut surface had a deep brown color and scattered throughout were a number of small, greyish, white nodules. The bile ducts including the hepatic and common bile ducts were markedly dilated and filled with thin, green bile. Tumor tissue extended into and surrounded the common bile duct narrowing the duct and in one area apparently completely obstructed the lumen. The gallbladder wall was similarly involved, and several large plaques of greyish-white tumor tissue were seen in the thickened wall. The lumen of the gallbladder was filled with thin, green bile.

The pancreas was surrounded by a mass of lymph nodes which was fairmly attached to it; it was not possible to differentiate pancreatic tissue from lymphoid tissue readily on gross examination. The entire pancreas appeared to be replaced by greyish-white tumor tissue. Very little normal coloring or pattern to suggest pancreatic tissue was seen.

The spleen weighed 1,500 gm. Here again, the cut surface did not resemble spleen at all but had a homogenous paste-like appearance with numerous areas of softening.

The gastrointestinal tract showed grossly no definite plaques of tumor tissue within the wall, although the wall was somewhat firmer than usual.

The kidneys together weighed 350 gm. and the cut surfaces showed numerous nodules of greyish-white tumor tissue in the cortex and some in the medulla. The nodules varied in size from 1 to 2 cm. The left ureter was surrounded and partially compressed by nodules of tumor tissue, but there was no apparent interference with urinary flow in this ureter since the ureter was not dilated above the site of compression.

The lymph nodes over the entire body were markedly enlarged. Large masses of lymph nodes were found in the mesentery and retroperitoneal areas. On cut section the lymph nodes all showed a greyish-white appearance resembling the tumor tissue described elsewhere.

Bone marrow samples removed from the sternum, the vertebra, and from the upper portion of the right femur all showed apparent cellular infiltrations and had a greyish-red appearance.

Microscopically, all of the tumor tissue showed a very similar cellular pattern. Neoplastic cells consisted of undifferentiated leukemic cells measuring from 15 to 20 micra in diameter and having a very scant rim of cytoplasm, or in some cells no cytoplasm at all. The nuclei had definite nuclear membranes and the nuclear chromatin tended to form small knots. Most of the nuclei were fairly round in shape, although occasionally a lobulated nucleus was seen. The infiltrates in the kidney, pancreas, spleen, liver, heart, and bone marrow were very extensive. In the kidney most of the cortex was replaced by leukemic infiltrate and the glomeruli and tubules were, for the most part, destroyed. Similarly, in the pancreas most of the pancreatic tissue was destroyed by the extensive leukemic infiltration. The same was true for most of the other organs. Although grossly no definite infiltrates had been noted in the gastrointestinal tract, on microscopic section every section studied showed infiltration by leukemia cells. Similarly, the genitourinary system showed leukemic infiltrates in all sections studied, including testicles and prostate. Sections of the bone marrow from the sternum, spine, and femur all showed replacement of the normal bone marrow by solid sheets of leukemic cells. It was felt that this should be classified as a stem-cell leukemia with very extensive visceral infiltration.

DR. J. S. BERRYMAN: Examination of the brain after fixation in formalin showed generalized congestion of all superficial vessels, with a small angiomatous malformation in the left cerebellopontine angle. There was moderate opticochiasmatic arachnoiditis. There were no gross areas of softening. The cranial nerves at the base of the brain were present and intact. The blood vessels at the base of the brain were normal. Sections through the brain showed generalized cerebral edema, with narrowing of the sulci and broadening of the gyri. There was

evidence of congestion throughout the white and grey matter. Congestion was also noted in the basal ganglia and thalamus. The third ventricle was slightly dilated. The substantia nigra and red nucleus could be identified grossly, and the only lesion noted was congestion. Sections through the level of the third nerve nucleus showed no gross lesions. The brain stem was rather soft due to poor fixation. There was a definite tonsillar herniation bilaterally but no evidence of pressure exerted on the medulla. Serial sections from the brain stem down to the spinal cord disclosed only intense congestion in the grey matter and to a lesser degree of the white matter. No gross areas of softening could be identified.

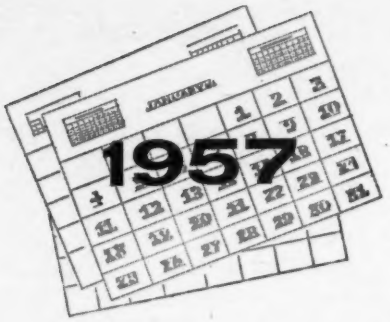
Microscopic: Hematoxylin and eosin stained sections of the occipital and frontal cortex disclosed round cell tumor infiltration in the leptomeninges and in the perivascular spaces of the cortex and white matter. There were up to five layers of cells surrounding some of these vessels, particularly in the white matter. The vertebral artery showed heavy infiltration of the adventitia. There was no direct invasion of the cortex or white matter. These cells making up the exudate in the perivascular spaces were round, small, dark-stained cells consisting almost entirely of nucleus with little or no cytoplasm. They appeared to be immature white blood cells. There was some early organization by fibroblasts. Mitotic figures were evident. The architecture of the cortex and individual neurons was normal.

A section through the midbrain at the level of the red nucleus and substantia nigra showed the lining of the aqueduct to be normal. There was marked thickening of the leptomeninges in the interpeduncular fossa with extensive infiltration of the third nerve fibers by tumor cells. This infiltrate continued into the substance of the brain stem on the medial aspect of the cerebral peduncles in the form of a perivascular extension. The neurons of the substantia nigra, red nucleus, and reticular formation of the brain stem were normal. The mesencephalic tegmental nuclei showed some decrease in the number of neurons and evidence of atrophy with shrinkage. A section through the mid-pons showed very little infiltration of the leptomeninges. All perivascular spaces in the basilar and tegmental portion of the pons showed collections of tumor cells. The pontine tegmental nuclei appeared normal. The neurons of the sixth cranial nerve nucleus showed altered staining reactions with pyknotic nucleoli and edema of the neurons. There were occasional nerve cells showing sclerosis. Tigrolysis was evident. Sections through the fifth cranial nerve nuclei showed poor staining of the neurons and tigrolysis. Many of the large neurons of the reticular formation showed poor staining with dissolution of their nuclei. Sections through the middle of the medulla at the level of the inferior olivary nucleus showed the previously mentioned extension into the leptomeninges, and infiltration of the eighth and ninth cranial nerves. There were numerous perivascular hemorrhages in the medullary tegmentum. The tegmental nuclei were well preserved except for altered staining reactions. All blood vessels were congested. The seventh nerve nucleus was identified, and the neurons showed nothing more than central chromatolysis. Sections through the lower medulla including the 12th nerve nucleus showed evidence of central tigrolysis of the neurons. Sections through the upper cervical spinal cord showed normal anterior horn cells, and collections of tumor cells in the leptomeninges.

Neuropathologic diagnosis: Leukemic infiltration of the perivascular spaces and cranial nerves of the brain, with secondary central chromatolysis of the corresponding neurons.

SUMMARY AND CLINICAL DISCUSSION

This is a case of a 28-year-old white man who presented himself with symptoms chiefly indicative of involvement of the nervous system. On March 14, 1950, a blood count had revealed 20,000 white blood cells with a differential in which 13 monocytes and 34 lymphocytes were seen in 100 counted cells. At that time the patient also had a hemoglobin of 12.5 gm. In view of this rather indefinite blood picture, the possibility of a blood dyscrasia was not considered. Terminally, however, the patient definitely developed a leukemic blood picture with white counts running as high as 240,000 and classical sternal marrow studies indicative of an acute leukemia, undifferentiated, and of a stem-cell type. At necropsy the patient showed very extensive visceral involvement of every organ in the body with the exception of the thyroid and adrenal glands.



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Woman's AUXILIARY

Report of the President of the Woman's Auxiliary to the Arizona Medical Association 1956-1957

AS PRESIDENT of the Woman's Auxiliary to the Arizona Medical Association, I am pleased to report the following work done by the auxiliary members of this state since the last state convention.

Four of our six organized counties, by means of door prizes at each meeting, memorial cards, and a white elephant sale, have raised funds for the American Medical Education Fund amounting to $532.

Today's Health magazine has again been a shining light in our accomplishments with every county as well as members-at-large participating. We sold 433 subscriptions plus an allowance for free 8-month subscriptions which the editors are giving doctors in Arizona who do not now subscribe, in deference to our high record in the past. Later we are to follow up on these subscriptions. Yavapai County Auxiliary had voted six gift subscriptions for new babies born during the holidays; when not enough were born, they sent the subscriptions to inform their state legislators on medical topics.

The Bulletin chairman reports 50 subscriptions sold in the state.

Programs have been informative and varied, covering such subjects as mental health, civil defense, legislation and health education, using movies, recordings and pamphlets from the American Medical Association. Our national theme — Health is our greatest heritage — has been carried out. The co-operation between legislative committees of the auxiliary and the Arizona Medical Association, meeting together, has been excellent.

Visits to all organized counties, including our newest, Coconino County Auxiliary, have been made by the president-elect and myself to bring to them the message and enthusiasm imparted at the fall conference of state presidents and presidents-elect in Chicago. A school of instruction was given at state convention time to the incoming officers and chairmen.

We assisted in publicizing the availability of the Salk vaccine when unused supplies were being sent back last summer, as requested by the polio organization in Arizona, upon conference with Dr. S. R. Caniglia.

The series of health recordings for radio from the American Medical Association have been used by three county auxiliaries to good advantage. Audiometer tests in schools are given by one auxiliary as a public service.

Each county has participated in the various health drives — cancer, cerebral palsy, heart, polio, and TV. Red Cross, United Fund and Community Council also have been given leadership and funds. Prescott Community Hospital is $5,842.84 richer due to the efforts of the 25 members of the Yavapai County Auxiliary in sponsoring a charity ball. Hospital aids, starting a new hospital auxiliary, and hospital fund drives are other types of co-operation shown. Exact amounts are not available because convention is almost a month earlier this year and drives are still in progress. Children's Colony, Child Guidance Clinic, Crippled Children, Visiting Nurse Service, Youth Center and Arizona Children's Home are other recipients of gifts and assistance with the funds raised by rummage sales. The Greater Phoenix Growth Committee had six auxiliary members on its sub-mommittees involving health and safety.

A file of members' affiliations with other organizations has been compiled in Maricopa and Pima counties.

The legislative chairman sent letters and telegrams opposing H. R. 7225 last summer when the bill was being considered. One county assisted its county medical society in securing signers for the pre-marital examination referendum in Arizona, which passed. Another committee attended public hearings on the raw milk bill in the recent Arizona legislature.

The Auxiliary News was sent to every doctor's wife in the state, to the editor of each state auxiliary, and national officers for a total of 800 copies. This is financed from auxiliary funds. Each month articles have appeared in Arizona Medicine, Journal of the Arizona Medical Association, a courtesy we appreciate very much.

It allows us to reach all our members monthly with reports of the work of our county auxiliaries and official resumes of national meetings.

We have a membership of 581, including 44 members-at-large and two associate members, a gain of 50 over last year. We are happy to welcome Coconino County Auxiliary into our number this year.

Our historian has sifted the records of 27 years since the organization of the state auxiliary and is having them bound for more permanent preservation. These volumes are kept at the state medical association headquarters.

Two girls entering St. Joheph's Hospital received full loans of $400 each from the Student Nurse Loan Fund this year, and another girl at Good Samaritan Hospital, who had had a loan, asked for $100 more to complete her education. Also another loan is pending. Letters have gone out to all high schools in the state and the chairman is now receiving applications for loans which are due in April. Repayments have, on the whole, been excellent. Since the beginning in 1950, 32 girls have used funds totaling $9,150. Five girls graduated last fall; two from Good Samaritan Hospital, two from St. Joseph's and one from St. Mary's Hospital. One of these, a Pima Indian girl, has achieved her ambition to work among her own race at the Hopi Indian Hospital, Keams Canyon.

The state auxiliary board supported the nurses in their requests to the board of regents for a collegiate nursing program leading to a degree in Arizona's institutions of higher learning. I am glad to be able to report the first of these collegiate courses will be offered this fall.

We have co-operated with the Joint Committee on Careers in Nursing, meeting with them in Tucson in January. This group included five members of the Women's Auxiliary to the Arizona Medical Association, four members of the Arizona League for Nursing, four members of the Arizona State Nurses' Association, and two members of Arizona Association of Student Nurses. A successful open house was again conducted at the hospitals on February 16 with local newsreels taking films of it for later showing on TV news programs. Also, the film, Girls in White, was shown on TV; radio, posters and newspapers called attention to recruitment week. One auxiliary sent packets for counseling students to the high school principals in southern Arizona. Included in the packet were the schools of professional nursing, program guides for Future Nurses Clubs, Handbook for Counselors and two reprints from the American Medical Association. A first aid class for Future Nurses Club of Yuma Union High School was given. A member of this auxiliary appeared on a TV program with the Pacific area representative of the Red Cross to secure volunteers for a home nursing course. Coconino County worked especially on physical therapy recruitment, and other fields included elsewhere in the state were: practical nursing, medical technology, occupational therapy, medical records and medical social work.

In the field of mental health, contacts have been made in the schools and public libraries of Gila County to distribute the series of letters from the auxiliary to the American Medical Association called Milestones to Marriage to seniors in high school. They are already placed in the libraries. We have co-operated with the Governor's Mental Health Research Committee and assisted in the survey of resources in the state. They have also helped mental health groups.

Although the chairman has furnished supplies and worked with state and county civil defense leaders, we find only half of our counties have civil defense chairmen. Members of one auxiliary on the border are continuing to serve in the Ground Observer Corps, and sold about 100 tickets for a mass feeding experiment where 4,300 persons were served in about three hours. Talks before other clubs were given.

An article on school safety in September Arizona Medicine stressing auto safety points brought out at the Chicago conference in visits to each county auxiliary, have been our contribution to the safety program.

It has been most gratifying to work in harmony with the Arizona Medical Association and my splendid board of directors. As a consequence, I have truly found my year as president a rewarding experience. Thank you for the privilege of serving. I wish also to express my appreciation for the assistance so readily given by the national officers and central office of the Woman's Auxiliary to the American Medical Association.

Respectfully submitted.

MRS. OSCAR W. THOENY,
President